



12065 Lebanon Rd.  
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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Tuesday October 18, 2011

Report Number: L540513

Samples Received: 10/07/11

Client Project:

Description: MCDA

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

October 18, 2011

Date Received : October 07, 2011  
 Description : MCDA  
 Sample ID : MCDA-SE  
 Collected By : Brennen Graff  
 Collection Date : 10/05/11 11:22

ESC Sample # : L540513-01  
 Site ID :  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	10/14/11	1
Chromium,Trivalent	10.	0.17	2.0	mg/kg		Calc.	10/12/11	1
ORP	120			mV	T8	2580	10/12/11	1
pH	8.6			su		9045D	10/11/11	1
Sodium Adsorption Ratio	35.					Calc.	10/12/11	1
Specific Conductance	1200			umhos/cm		9050AMo	10/12/11	1
Mercury	0.048	0.0015	0.020	mg/kg		7471	10/11/11	1
Arsenic	8.1	0.32	1.0	mg/kg		6010B	10/12/11	1
Barium	1900	0.050	0.25	mg/kg		6010B	10/12/11	1
Cadmium	1.2	0.040	0.25	mg/kg		6010B	10/12/11	1
Chromium	10.	0.085	0.50	mg/kg		6010B	10/12/11	1
Copper	31.	1.0	5.0	mg/kg		6010B	10/12/11	5
Lead	13.	0.45	1.3	mg/kg		6010B	10/12/11	5
Nickel	18.	0.26	1.0	mg/kg		6010B	10/12/11	1
Selenium	14.	0.32	1.0	mg/kg		6010B	10/12/11	1
Silver	U	0.82	2.5	mg/kg	O	6010B	10/12/11	5
Zinc	74.	0.34	1.5	mg/kg		6010B	10/12/11	1
TPH (GC/FID) Low Fraction	0.51	0.25	0.50	mg/kg		8015D/G	10/13/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.1			% Rec.		602/801	10/13/11	5
Benzene	0.14	0.017	0.050	mg/kg		8260B	10/09/11	50
Toluene	0.16	0.016	0.25	mg/kg	J	8260B	10/09/11	50
Ethylbenzene	0.034	0.019	0.050	mg/kg	J	8260B	10/09/11	50
Total Xylenes	0.14	0.023	0.15	mg/kg	J	8260B	10/09/11	50
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	10/09/11	50
Dibromofluoromethane	92.6			% Rec.		8260B	10/09/11	50
a,a,a-Trifluorotoluene	106.			% Rec.		8260B	10/09/11	50
4-Bromofluorobenzene	113.			% Rec.		8260B	10/09/11	50
TPH (GC/FID) High Fraction	1200	15.	80.	mg/kg		3546/DR	10/12/11	20
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	10/12/11	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 10/18/11 12:31 Printed: 10/18/11 12:32  
 L540513-01 (PH) - 8.63@21.0c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

October 18, 2011

Date Received : October 07, 2011  
 Description : MCDA  
 Sample ID : MCDA-SE  
 Collected By : Brennen Graff  
 Collection Date : 10/05/11 11:22

ESC Sample # : L540513-01  
 Site ID :  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0076	0.060	mg/kg		8270C-S	10/14/11	10
Acenaphthene	0.066	0.0071	0.060	mg/kg		8270C-S	10/14/11	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	10/14/11	10
Benzo(a)anthracene	U	0.0092	0.060	mg/kg		8270C-S	10/14/11	10
Benzo(a)pyrene	U	0.0062	0.060	mg/kg		8270C-S	10/14/11	10
Benzo(b)fluoranthene	U	0.0082	0.060	mg/kg		8270C-S	10/14/11	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	10/14/11	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	10/14/11	10
Chrysene	U	0.011	0.060	mg/kg		8270C-S	10/14/11	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	10/14/11	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	10/14/11	10
Fluorene	U	0.0055	0.060	mg/kg		8270C-S	10/14/11	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	10/14/11	10
Naphthalene	0.032	0.0065	0.060	mg/kg	J	8270C-S	10/14/11	10
Phenanthrene	0.014	0.0074	0.060	mg/kg	J	8270C-S	10/14/11	10
Pyrene	U	0.0059	0.060	mg/kg		8270C-S	10/14/11	10
1-Methylnaphthalene	0.031	0.0079	0.060	mg/kg	J	8270C-S	10/14/11	10
2-Methylnaphthalene	0.053	0.0059	0.060	mg/kg	J	8270C-S	10/14/11	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	10/14/11	10
Surrogate Recovery								
Nitrobenzene-d5	124.			% Rec.		8270C-S	10/14/11	10
2-Fluorobiphenyl	67.5			% Rec.		8270C-S	10/14/11	10
p-Terphenyl-d14	111.			% Rec.		8270C-S	10/14/11	10

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Reported: 10/18/11 12:31 Printed: 10/18/11 12:32  
 L540513-01 (PH) - 8.63@21.0c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L540513-01	WG559596	SAMP	Silver	R1891352	O
	WG559644	SAMP	o-Terphenyl	R1894235	J7
	WG559600	SAMP	Toluene	R1895393	J
	WG559600	SAMP	Ethylbenzene	R1895393	J
	WG559600	SAMP	Total Xylenes	R1895393	J
	WG559698	SAMP	Naphthalene	R1894834	J
	WG559698	SAMP	Phenanthrene	R1894834	J
	WG559698	SAMP	1-Methylnaphthalene	R1894834	J
	WG559698	SAMP	2-Methylnaphthalene	R1894834	J
	WG560157	SAMP	ORP	R1894264	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
10/18/11 at 12:32:13

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L540513-01 Account: OXYGJCO Received: 10/07/11 09:00 Due Date: 10/14/11 00:00 RPT Date: 10/18/11 12:31



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760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Tuesday October 25, 2011

Report Number: L542149

Samples Received: 10/18/11

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

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NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

October 25, 2011

Date Received : October 18, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : 609-33-54-CUTTINGS  
 Collected By : CJB  
 Collection Date : 10/14/11 10:40

ESC Sample # : L542149-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	10/25/11	1
Chromium,Trivalent	7.6	0.17	2.0	mg/kg		Calc.	10/21/11	1
ORP	-160			mV	T8	2580	10/20/11	1
pH	8.2			su		9045D	10/20/11	1
Sodium Adsorption Ratio	14.					Calc.	10/19/11	1
Specific Conductance	1600			umhos/cm		9050AMo	10/19/11	1
Mercury	0.039	0.0015	0.020	mg/kg		7471	10/20/11	1
Arsenic	2.5	0.32	1.0	mg/kg		6010B	10/21/11	1
Barium	2000	0.050	0.25	mg/kg		6010B	10/21/11	1
Cadmium	0.69	0.040	0.25	mg/kg		6010B	10/21/11	1
Chromium	7.6	0.085	0.50	mg/kg		6010B	10/21/11	1
Copper	22.	0.21	1.0	mg/kg		6010B	10/21/11	1
Lead	9.5	0.090	0.25	mg/kg		6010B	10/21/11	1
Nickel	14.	0.26	1.0	mg/kg		6010B	10/21/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	10/21/11	1
Silver	U	0.16	0.50	mg/kg		6010B	10/21/11	1
Zinc	77.	0.34	1.5	mg/kg		6010B	10/21/11	1
TPH (GC/FID) Low Fraction	U	0.25	0.50	mg/kg		8015D/G	10/19/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	95.8			% Rec.		602/801	10/19/11	5
Benzene	U	0.0017	0.0050	mg/kg		8260B	10/21/11	5
Toluene	0.0044	0.0016	0.025	mg/kg	J	8260B	10/21/11	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	10/21/11	5
Total Xylenes	0.0093	0.0023	0.015	mg/kg	J	8260B	10/21/11	5
Surrogate Recovery				% Rec.				
Toluene-d8	100.			% Rec.		8260B	10/21/11	5
Dibromofluoromethane	99.1			% Rec.		8260B	10/21/11	5
a,a,a-Trifluorotoluene	99.9			% Rec.		8260B	10/21/11	5
4-Bromofluorobenzene	99.2			% Rec.		8260B	10/21/11	5
TPH (GC/FID) High Fraction	940	15.	80.	mg/kg		3546/DR	10/21/11	20
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	10/21/11	20

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Reported: 10/25/11 15:35 Printed: 10/25/11 15:35  
 L542149-01 (PH) - 8.21@18.4c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

October 25, 2011

Date Received : October 18, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : 609-33-54-CUTTINGS  
 Collected By : CJB  
 Collection Date : 10/14/11 10:40

ESC Sample # : L542149-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.019	0.15	mg/kg		8270C-S	10/20/11	25
Acenaphthene	0.073	0.018	0.15	mg/kg	J	8270C-S	10/20/11	25
Acenaphthylene	U	0.014	0.15	mg/kg		8270C-S	10/20/11	25
Benzo(a)anthracene	0.029	0.023	0.15	mg/kg	J	8270C-S	10/20/11	25
Benzo(a)pyrene	U	0.016	0.15	mg/kg		8270C-S	10/20/11	25
Benzo(b)fluoranthene	U	0.021	0.15	mg/kg		8270C-S	10/20/11	25
Benzo(g,h,i)perylene	U	0.031	0.15	mg/kg		8270C-S	10/20/11	25
Benzo(k)fluoranthene	U	0.034	0.15	mg/kg		8270C-S	10/20/11	25
Chrysene	U	0.028	0.15	mg/kg		8270C-S	10/20/11	25
Dibenz(a,h)anthracene	U	0.028	0.15	mg/kg		8270C-S	10/20/11	25
Fluoranthene	0.060	0.026	0.15	mg/kg	J	8270C-S	10/20/11	25
Fluorene	U	0.014	0.15	mg/kg		8270C-S	10/20/11	25
Indeno(1,2,3-cd)pyrene	U	0.029	0.15	mg/kg		8270C-S	10/20/11	25
Naphthalene	0.037	0.016	0.15	mg/kg	J	8270C-S	10/20/11	25
Phenanthrene	0.019	0.018	0.15	mg/kg	J	8270C-S	10/20/11	25
Pyrene	U	0.015	0.15	mg/kg		8270C-S	10/20/11	25
1-Methylnaphthalene	0.035	0.020	0.15	mg/kg	J	8270C-S	10/20/11	25
2-Methylnaphthalene	0.066	0.015	0.15	mg/kg	J	8270C-S	10/20/11	25
2-Chloronaphthalene	U	0.015	0.15	mg/kg		8270C-S	10/20/11	25
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	10/20/11	25
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	10/20/11	25
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	10/20/11	25

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Reported: 10/25/11 15:35 Printed: 10/25/11 15:35  
 L542149-01 (PH) - 8.21@18.4c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L542149-01	WG561270	SAMP	o-Terphenyl	R1902393	J7
	WG561647	SAMP	Toluene	R1906353	J
	WG561647	SAMP	Total Xylenes	R1906353	J
	WG561274	SAMP	Acenaphthene	R1903797	J
	WG561274	SAMP	Benzo(a)anthracene	R1903797	J
	WG561274	SAMP	Fluoranthene	R1903797	J
	WG561274	SAMP	Naphthalene	R1903797	J
	WG561274	SAMP	Phenanthrene	R1903797	J
	WG561274	SAMP	1-Methylnaphthalene	R1903797	J
	WG561274	SAMP	2-Methylnaphthalene	R1903797	J
	WG561274	SAMP	Nitrobenzene-d5	R1903797	J7
	WG561274	SAMP	2-Fluorobiphenyl	R1903797	J7
	WG561274	SAMP	p-Terphenyl-d14	R1903797	J7
	WG561411	SAMP	ORP	R1903616	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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- 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  
10/25/11 at 15:35:34

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L542149-01 Account: OXYGJCO Received: 10/18/11 09:00 Due Date: 10/25/11 00:00 RPT Date: 10/25/11 15:35



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

## Report Summary

Thursday November 03, 2011

Report Number: L543367

Samples Received: 10/25/11

Client Project:

Description: Cascade Mesa MCDA

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

November 03, 2011

Date Received : October 25, 2011  
 Description : Cascade Mesa MCDA  
 Sample ID : MCDA-SOUTH-102011  
 Collected By : Brennen Graff  
 Collection Date : 10/20/11 13:42

ESC Sample # : L543367-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.4	0.71	2.0	mg/kg	J	3060A/7	11/01/11	1
Chromium,Trivalent	11.	0.17	2.0	mg/kg		Calc.	10/29/11	1
ORP	130			mV	T8	2580	10/29/11	1
pH	8.9			su	T8	9045D	10/26/11	1
Sodium Adsorption Ratio	61.					Calc.	10/27/11	1
Specific Conductance	1900			umhos/cm		9050AMo	10/27/11	1
Mercury	0.0072	0.0015	0.020	mg/kg	J	7471	10/27/11	1
Arsenic	10.	1.6	5.0	mg/kg		6010B	10/29/11	5
Barium	210	0.050	0.25	mg/kg		6010B	10/29/11	1
Cadmium	0.79	0.040	0.25	mg/kg		6010B	10/29/11	1
Chromium	13.	0.085	0.50	mg/kg		6010B	10/29/11	1
Copper	15.	0.21	1.0	mg/kg		6010B	10/29/11	1
Lead	17.	0.090	0.25	mg/kg		6010B	10/29/11	1
Nickel	13.	1.3	5.0	mg/kg		6010B	10/29/11	5
Selenium	U	1.6	5.0	mg/kg	O	6010B	10/29/11	5
Silver	0.21	0.16	0.50	mg/kg	J	6010B	10/29/11	1
Zinc	46.	0.34	1.5	mg/kg		6010B	10/29/11	1
TPH (GC/FID) Low Fraction	36.	5.0	10.	mg/kg		8015D/G	10/26/11	100
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.9			% Rec.		602/801	10/26/11	100
Benzene	0.097	0.017	0.050	mg/kg		8260B	10/27/11	50
Toluene	0.53	0.016	0.25	mg/kg		8260B	10/27/11	50
Ethylbenzene	0.40	0.019	0.050	mg/kg		8260B	10/27/11	50
Total Xylenes	1.4	0.023	0.15	mg/kg		8260B	10/27/11	50
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	10/27/11	50
Dibromofluoromethane	108.			% Rec.		8260B	10/27/11	50
a,a,a-Trifluorotoluene	98.8			% Rec.		8260B	10/27/11	50
4-Bromofluorobenzene	122.			% Rec.		8260B	10/27/11	50
TPH (GC/FID) High Fraction	140	0.77	4.0	mg/kg		3546/DR	11/02/11	1
Surrogate recovery(%) o-Terphenyl	789.			% Rec.	J1	3546/DR	11/02/11	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 11/03/11 11:27 Printed: 11/03/11 11:49  
 L543367-01 (PH) - 8.93@19.9c  
 L543367-01 (DRO) - Previous run also had high SURR recovery. Matrix effect.



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

November 03, 2011

Date Received : October 25, 2011  
 Description : Cascade Mesa MCDA  
 Sample ID : MCDA-SOUTH-102011  
 Collected By : Brennen Graff  
 Collection Date : 10/20/11 13:42

ESC Sample # : L543367-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00076	0.0060	mg/kg		8270C-S	10/28/11	1
Acenaphthene	U	0.00071	0.0060	mg/kg		8270C-S	10/28/11	1
Acenaphthylene	U	0.00057	0.0060	mg/kg		8270C-S	10/28/11	1
Benzo(a)anthracene	0.012	0.00092	0.0060	mg/kg		8270C-S	10/28/11	1
Benzo(a)pyrene	U	0.00062	0.0060	mg/kg		8270C-S	10/28/11	1
Benzo(b)fluoranthene	U	0.00082	0.0060	mg/kg		8270C-S	10/28/11	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	10/28/11	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	10/28/11	1
Chrysene	0.014	0.0011	0.0060	mg/kg		8270C-S	10/28/11	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	10/28/11	1
Fluoranthene	U	0.0010	0.0060	mg/kg		8270C-S	10/28/11	1
Fluorene	U	0.00055	0.0060	mg/kg		8270C-S	10/28/11	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	10/28/11	1
Naphthalene	0.049	0.00065	0.0060	mg/kg		8270C-S	10/28/11	1
Phenanthrene	0.0076	0.00074	0.0060	mg/kg		8270C-S	10/28/11	1
Pyrene	U	0.00059	0.0060	mg/kg		8270C-S	10/28/11	1
1-Methylnaphthalene	0.034	0.00079	0.0060	mg/kg		8270C-S	10/28/11	1
2-Methylnaphthalene	0.14	0.00059	0.0060	mg/kg		8270C-S	10/28/11	1
2-Chloronaphthalene	0.0053	0.00060	0.0060	mg/kg	J	8270C-S	10/28/11	1
Surrogate Recovery								
Nitrobenzene-d5	94.1			% Rec.		8270C-S	10/28/11	1
2-Fluorobiphenyl	67.5			% Rec.		8270C-S	10/28/11	1
p-Terphenyl-d14	57.7			% Rec.		8270C-S	10/28/11	1

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 Note:

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 L543367-01 (PH) - 8.93@19.9c  
 L543367-01 (DRO) - Previous run also had high SURR recovery. Matrix effect.

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L543367-01	WG562450	SAMP	Selenium	R1914193	O
	WG562450	SAMP	Silver	R1914193	J
	WG563373	SAMP	o-Terphenyl	R1918852	J1
	WG562385	SAMP	Chromium, Hexavalent	R1916637	J
	WG562494	SAMP	Mercury	R1912454	J
	WG562383	SAMP	pH	R1909896	T8
	WG562637	SAMP	2-Chloronaphthalene	R1913313	J
	WG562990	SAMP	ORP	R1914773	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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.



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Tuesday November 15, 2011

Report Number: L545613

Samples Received: 11/08/11

Client Project: 900546.0013.010

Description: MCDA Cuttings

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

November 15, 2011

Date Received : November 08, 2011  
 Description : MCDA Cuttings  
 Sample ID : MCDA-11711  
 Collected By : CJB/BG  
 Collection Date : 11/07/11 10:25

ESC Sample # : L545613-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.2	0.71	2.0	mg/kg	JP1	3060A/7	11/11/11	1
Chromium,Trivalent	17.	0.17	2.0	mg/kg		Calc.	11/11/11	1
ORP	100			mV	T8	2580	11/11/11	1
pH	9.6			su		9045D	11/10/11	1
Sodium Adsorption Ratio	36.					Calc.	11/10/11	1
Specific Conductance	1000			umhos/cm		9050AMo	11/11/11	1
Mercury	0.013	0.0015	0.020	mg/kg	J	7471	11/10/11	1
Arsenic	0.40	0.32	1.0	mg/kg	J	6010B	11/11/11	1
Barium	230	0.050	0.25	mg/kg		6010B	11/11/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	11/11/11	1
Chromium	18.	0.085	0.50	mg/kg		6010B	11/11/11	1
Copper	56.	0.21	1.0	mg/kg		6010B	11/11/11	1
Lead	12.	0.090	0.25	mg/kg		6010B	11/11/11	1
Nickel	13.	0.26	1.0	mg/kg		6010B	11/11/11	1
Selenium	2.9	0.32	1.0	mg/kg		6010B	11/11/11	1
Silver	0.45	0.16	0.50	mg/kg	J	6010B	11/11/11	1
Zinc	48.	0.34	1.5	mg/kg		6010B	11/11/11	1
TPH (GC/FID) Low Fraction	2.5	0.25	0.50	mg/kg		8015D/G	11/08/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	87.9			% Rec.		602/801	11/08/11	5
Benzene	0.079	0.0017	0.0050	mg/kg		8260B	11/09/11	5
Toluene	0.090	0.0016	0.025	mg/kg		8260B	11/09/11	5
Ethylbenzene	0.0072	0.0019	0.0050	mg/kg		8260B	11/09/11	5
Total Xylenes	0.080	0.0023	0.015	mg/kg		8260B	11/09/11	5
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	11/09/11	5
Dibromofluoromethane	90.7			% Rec.		8260B	11/09/11	5
a,a,a-Trifluorotoluene	112.			% Rec.		8260B	11/09/11	5
4-Bromofluorobenzene	101.			% Rec.		8260B	11/09/11	5
TPH (GC/FID) High Fraction	780	3.8	20.	mg/kg		3546/DR	11/14/11	5
Surrogate recovery(%) o-Terphenyl	53.9			% Rec.		3546/DR	11/14/11	5

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 Note:

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Reported: 11/15/11 10:33 Printed: 11/15/11 10:34  
 L545613-01 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect.  
 L545613-01 (PH) - 9.59@19.7c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

November 15, 2011

Date Received : November 08, 2011  
 Description : MCDA Cuttings  
 Sample ID : MCDA-11711  
 Collected By : CJB/BG  
 Collection Date : 11/07/11 10:25

ESC Sample # : L545613-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.059	0.0076	0.060	mg/kg	J	8270C-S	11/12/11	10
Acenaphthene	0.059	0.0071	0.060	mg/kg	J	8270C-S	11/12/11	10
Acenaphthylene	0.013	0.0057	0.060	mg/kg	J	8270C-S	11/12/11	10
Benzo(a)anthracene	0.098	0.0092	0.060	mg/kg		8270C-S	11/12/11	10
Benzo(a)pyrene	0.11	0.0062	0.060	mg/kg		8270C-S	11/12/11	10
Benzo(b)fluoranthene	0.082	0.0082	0.060	mg/kg	J3	8270C-S	11/12/11	10
Benzo(g,h,i)perylene	0.067	0.012	0.060	mg/kg		8270C-S	11/12/11	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	11/12/11	10
Chrysene	0.21	0.011	0.060	mg/kg		8270C-S	11/12/11	10
Dibenz(a,h)anthracene	0.039	0.011	0.060	mg/kg	J	8270C-S	11/12/11	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	11/12/11	10
Fluorene	0.21	0.0055	0.060	mg/kg		8270C-S	11/12/11	10
Indeno(1,2,3-cd)pyrene	0.022	0.012	0.060	mg/kg	J	8270C-S	11/12/11	10
Naphthalene	1.2	0.0065	0.060	mg/kg		8270C-S	11/12/11	10
Phenanthrene	0.49	0.0074	0.060	mg/kg		8270C-S	11/12/11	10
Pyrene	0.098	0.0059	0.060	mg/kg		8270C-S	11/12/11	10
1-Methylnaphthalene	1.1	0.0079	0.060	mg/kg		8270C-S	11/12/11	10
2-Methylnaphthalene	2.5	0.0059	0.060	mg/kg		8270C-S	11/12/11	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	11/12/11	10
Surrogate Recovery								
Nitrobenzene-d5	171.			% Rec.	J1	8270C-S	11/12/11	10
2-Fluorobiphenyl	96.3			% Rec.		8270C-S	11/12/11	10
p-Terphenyl-d14	518.			% Rec.	J1	8270C-S	11/12/11	10

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Reported: 11/15/11 10:33 Printed: 11/15/11 10:34  
 L545613-01 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect.  
 L545613-01 (PH) - 9.59@19.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L545613-01	WG564891	SAMP	Arsenic	R1930012	J
	WG564891	SAMP	Silver	R1930012	J
	WG564219	SAMP	Chromium,Hexavalent	R1928873	JP1
	WG564725	SAMP	Mercury	R1927300	J
	WG565250	SAMP	Anthracene	R1930132	J
	WG565250	SAMP	Acenaphthene	R1930132	J
	WG565250	SAMP	Acenaphthylene	R1930132	J
	WG565250	SAMP	Benzo(b)fluoranthene	R1930132	J3
	WG565250	SAMP	Dibenz(a,h)anthracene	R1930132	J
	WG565250	SAMP	Indeno(1,2,3-cd)pyrene	R1930132	J
	WG565250	SAMP	Nitrobenzene-d5	R1930132	J1
	WG565250	SAMP	p-Terphenyl-d14	R1930132	J1
	WG565090	SAMP	ORP	R1928893	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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)."

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- 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  
11/15/11 at 10:34:11

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L545613-01 Account: OXYGJCO Received: 11/08/11 09:00 Due Date: 11/15/11 00:00 RPT Date: 11/15/11 10:33



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Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Friday November 18, 2011

Report Number: L546375

Samples Received: 11/11/11

Client Project:

Description: MCDA

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

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Est. 1970

REPORT OF ANALYSIS

November 18, 2011

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : November 11, 2011  
 Description : MCDA  
 Sample ID : MCDA-CUTW-111011  
 Collected By : Brennen Graff  
 Collection Date : 11/10/11 08:45

ESC Sample # : L546375-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	2.0	0.71	2.0	mg/kg	J	3060A/7	11/16/11	1
Chromium,Trivalent	10.	0.17	2.0	mg/kg		Calc.	11/15/11	1
ORP	100			mV	T8	2580	11/16/11	1
pH	8.7			su		9045D	11/18/11	1
Sodium Adsorption Ratio	35.					Calc.	11/16/11	1
Specific Conductance	1900			umhos/cm		9050AMo	11/16/11	1
Mercury	0.0092	0.0015	0.020	mg/kg	J	7471	11/15/11	1
Arsenic	3.1	0.32	1.0	mg/kg		6010B	11/15/11	1
Barium	140	0.050	0.25	mg/kg		6010B	11/15/11	1
Cadmium	0.16	0.040	0.25	mg/kg	J	6010B	11/15/11	1
Chromium	12.	0.085	0.50	mg/kg		6010B	11/15/11	1
Copper	17.	0.21	1.0	mg/kg		6010B	11/15/11	1
Lead	9.4	0.090	0.25	mg/kg		6010B	11/15/11	1
Nickel	8.6	0.26	1.0	mg/kg		6010B	11/15/11	1
Selenium	3.1	0.32	1.0	mg/kg		6010B	11/15/11	1
Silver	0.65	0.16	0.50	mg/kg		6010B	11/15/11	1
Zinc	41.	0.34	1.5	mg/kg		6010B	11/15/11	1
TPH (GC/FID) Low Fraction	2.3	0.25	0.50	mg/kg		8015D/G	11/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	88.8			% Rec.		602/801	11/12/11	5
Benzene	0.028	0.0017	0.0050	mg/kg		8260B	11/12/11	5
Toluene	0.037	0.0016	0.025	mg/kg		8260B	11/12/11	5
Ethylbenzene	0.0042	0.0019	0.0050	mg/kg	J	8260B	11/12/11	5
Total Xylenes	0.031	0.0023	0.015	mg/kg		8260B	11/12/11	5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	11/12/11	5
Dibromofluoromethane	123.			% Rec.		8260B	11/12/11	5
a,a,a-Trifluorotoluene	93.8			% Rec.		8260B	11/12/11	5
4-Bromofluorobenzene	98.0			% Rec.		8260B	11/12/11	5
TPH (GC/FID) High Fraction	570	15.	80.	mg/kg		3546/DR	11/14/11	20
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	11/14/11	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 11/18/11 17:17 Printed: 11/18/11 17:17  
 L546375-01 (DRO) - extract is thick & dark, no lower dilution  
 L546375-01 (PH) - 8.70@18.4c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

November 18, 2011

Date Received : November 11, 2011  
 Description : MCDA  
 Sample ID : MCDA-CUTW-111011  
 Collected By : Brennen Graff  
 Collection Date : 11/10/11 08:45

ESC Sample # : L546375-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.025	0.015	0.12	mg/kg	J	8270C-S	11/12/11	20
Acenaphthene	0.020	0.014	0.12	mg/kg	J	8270C-S	11/12/11	20
Acenaphthylene	0.021	0.011	0.12	mg/kg	J	8270C-S	11/12/11	20
Benzo(a)anthracene	0.032	0.018	0.12	mg/kg	J	8270C-S	11/12/11	20
Benzo(a)pyrene	U	0.012	0.12	mg/kg		8270C-S	11/12/11	20
Benzo(b)fluoranthene	0.024	0.016	0.12	mg/kg	JJ3	8270C-S	11/12/11	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	11/12/11	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	11/12/11	20
Chrysene	0.080	0.022	0.12	mg/kg	J	8270C-S	11/12/11	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	11/12/11	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	11/12/11	20
Fluorene	0.083	0.011	0.12	mg/kg	J	8270C-S	11/12/11	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	11/12/11	20
Naphthalene	0.40	0.013	0.12	mg/kg		8270C-S	11/12/11	20
Phenanthrene	0.19	0.015	0.12	mg/kg		8270C-S	11/12/11	20
Pyrene	0.033	0.012	0.12	mg/kg	J	8270C-S	11/12/11	20
1-Methylnaphthalene	0.41	0.016	0.12	mg/kg		8270C-S	11/12/11	20
2-Methylnaphthalene	0.81	0.012	0.12	mg/kg		8270C-S	11/12/11	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	11/12/11	20
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	11/12/11	20
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	11/12/11	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	11/12/11	20

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 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 11/18/11 17:17 Printed: 11/18/11 17:17  
 L546375-01 (DRO) - extract is thick & dark, no lower dilution  
 L546375-01 (PH) - 8.70@18.4c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L546375-01	WG565431	SAMP	Cadmium	R1932812	J
	WG565319	SAMP	o-Terphenyl	R1932074	J7
	WG565584	SAMP	Chromium, Hexavalent	R1933994	J
	WG565292	SAMP	Mercury	R1932954	J
	WG565285	SAMP	Ethylbenzene	R1931812	J
	WG565250	SAMP	Anthracene	R1930132	J
	WG565250	SAMP	Acenaphthene	R1930132	J
	WG565250	SAMP	Acenaphthylene	R1930132	J
	WG565250	SAMP	Benzo(a)anthracene	R1930132	J
	WG565250	SAMP	Benzo(b)fluoranthene	R1930132	JJ3
	WG565250	SAMP	Chrysene	R1930132	J
	WG565250	SAMP	Fluorene	R1930132	J
	WG565250	SAMP	Pyrene	R1930132	J
	WG565250	SAMP	Nitrobenzene-d5	R1930132	J7
	WG565250	SAMP	2-Fluorobiphenyl	R1930132	J7
	WG565250	SAMP	p-Terphenyl-d14	R1930132	J7
	WG565578	SAMP	ORP	R1933894	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
11/18/11 at 17:17:46

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L546375-01 Account: OXYGJCO Received: 11/11/11 09:00 Due Date: 11/18/11 00:00 RPT Date: 11/18/11 17:17



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Wednesday December 14, 2011

Report Number: L549975

Samples Received: 12/06/11

Client Project:

Description: MCDA

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
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REPORT OF ANALYSIS

December 14, 2011

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : December 06, 2011  
 Description : MCDA  
 Sample ID : MCDAS 6-8 IN  
 Collected By : Brennen Graff  
 Collection Date : 12/05/11 10:20

ESC Sample # : L549975-01  
 Site ID :  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	7.1	20.	mg/kg	O	3060A/7	12/12/11	10
Chromium,Trivalent	U	0.17	20.	mg/kg	O	Calc.	12/08/11	1
ORP	98.			mV	T8	2580	12/09/11	1
pH	9.7			su	T8	9045D	12/08/11	1
Sodium Adsorption Ratio	46.					Calc.	12/10/11	1
Specific Conductance	2000			umhos/cm		9050AMo	12/09/11	1
Mercury	0.014	0.0015	0.020	mg/kg	J	7471	12/08/11	1
Arsenic	2.3	0.32	1.0	mg/kg		6010B	12/08/11	1
Barium	520	0.050	0.25	mg/kg		6010B	12/08/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	12/08/11	1
Chromium	11.	0.085	0.50	mg/kg		6010B	12/08/11	1
Copper	18.	0.21	1.0	mg/kg		6010B	12/08/11	1
Lead	9.3	0.090	0.25	mg/kg		6010B	12/08/11	1
Nickel	8.5	0.26	1.0	mg/kg		6010B	12/08/11	1
Selenium	0.83	0.32	1.0	mg/kg	J	6010B	12/08/11	1
Silver	0.22	0.16	0.50	mg/kg	J	6010B	12/08/11	1
Zinc	36.	0.34	1.5	mg/kg		6010B	12/08/11	1
TPH (GC/FID) Low Fraction	8.9	0.25	0.50	mg/kg		8015D/G	12/06/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.4			% Rec.		602/801	12/06/11	5
Benzene	0.058	0.0017	0.0050	mg/kg		8260B	12/07/11	5
Toluene	0.074	0.0016	0.025	mg/kg		8260B	12/07/11	5
Ethylbenzene	0.014	0.0019	0.0050	mg/kg		8260B	12/07/11	5
Total Xylenes	0.077	0.0023	0.015	mg/kg		8260B	12/07/11	5
Surrogate Recovery								
Toluene-d8	98.9			% Rec.		8260B	12/07/11	5
Dibromofluoromethane	98.5			% Rec.		8260B	12/07/11	5
a,a,a-Trifluorotoluene	99.7			% Rec.		8260B	12/07/11	5
4-Bromofluorobenzene	88.0			% Rec.		8260B	12/07/11	5
TPH (GC/FID) High Fraction	690	7.7	40.	mg/kg		3546/DR	12/13/11	10
Surrogate recovery(%) o-Terphenyl	6480			% Rec.	J1	3546/DR	12/13/11	10

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Reported: 12/14/11 12:22 Printed: 12/14/11 12:22  
 L549975-01 (DRO) - second extraction confirms  
 L549975-01 (CR6) - Diluted due to sample color interference.  
 L549975-01 (PH) - 9.73@18.7c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 14, 2011

Date Received : December 06, 2011  
 Description : MCDA  
 Sample ID : MCDAS 6-8 IN  
 Collected By : Brennen Graff  
 Collection Date : 12/05/11 10:20

ESC Sample # : L549975-01  
 Site ID :  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.011	0.0076	0.060	mg/kg	J	8270C-S	12/07/11	10
Acenaphthene	0.019	0.0071	0.060	mg/kg	J	8270C-S	12/07/11	10
Acenaphthylene	0.0062	0.0057	0.060	mg/kg	J	8270C-S	12/07/11	10
Benzo(a)anthracene	U	0.0092	0.060	mg/kg		8270C-S	12/07/11	10
Benzo(a)pyrene	0.015	0.0062	0.060	mg/kg	J	8270C-S	12/07/11	10
Benzo(b)fluoranthene	0.017	0.0082	0.060	mg/kg	J	8270C-S	12/07/11	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	12/07/11	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	12/07/11	10
Chrysene	0.039	0.011	0.060	mg/kg	J	8270C-S	12/07/11	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	12/07/11	10
Fluoranthene	0.013	0.010	0.060	mg/kg	J	8270C-S	12/07/11	10
Fluorene	0.057	0.0055	0.060	mg/kg	J	8270C-S	12/07/11	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	12/07/11	10
Naphthalene	0.41	0.0065	0.060	mg/kg		8270C-S	12/07/11	10
Phenanthrene	0.15	0.0074	0.060	mg/kg		8270C-S	12/07/11	10
Pyrene	0.025	0.0059	0.060	mg/kg	J	8270C-S	12/07/11	10
1-Methylnaphthalene	0.32	0.0079	0.060	mg/kg		8270C-S	12/07/11	10
2-Methylnaphthalene	0.59	0.0059	0.060	mg/kg		8270C-S	12/07/11	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	12/07/11	10
Surrogate Recovery								
Nitrobenzene-d5	37.0				% Rec.	8270C-S	12/07/11	10
2-Fluorobiphenyl	59.7				% Rec.	8270C-S	12/07/11	10
p-Terphenyl-d14	117.				% Rec.	8270C-S	12/07/11	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
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 Note:

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Reported: 12/14/11 12:22 Printed: 12/14/11 12:22  
 L549975-01 (DRO) - second extraction confirms  
 L549975-01 (CR6) - Diluted due to sample color interference.  
 L549975-01 (PH) - 9.73@18.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L549975-01	WG568769	SAMP	Selenium	R1959153	J
	WG568769	SAMP	Silver	R1959153	J
	WG569759	SAMP	o-Terphenyl	R1965575	J1
	WG569156	SAMP	Chromium,Hexavalent	R1963152	O
	WG568789	SAMP	Mercury	R1959254	J
	WG568909	SAMP	pH	R1959313	T8
	WG568686	SAMP	Anthracene	R1958553	J
	WG568686	SAMP	Acenaphthene	R1958553	J
	WG568686	SAMP	Acenaphthylene	R1958553	J
	WG568686	SAMP	Benzo(a)pyrene	R1958553	J
	WG568686	SAMP	Benzo(b)fluoranthene	R1958553	J
	WG568686	SAMP	Chrysene	R1958553	J
	WG568686	SAMP	Fluoranthene	R1958553	J
	WG568686	SAMP	Fluorene	R1958553	J
	WG568686	SAMP	Pyrene	R1958553	J
	WG569149	SAMP	ORP	R1962097	T8
	WG568769	SAMP	Chromium,Trivalent	R1959153	O

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
12/14/11 at 12:22:36

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L549975-01 Account: OXYGJCO Received: 12/06/11 09:00 Due Date: 12/13/11 00:00 RPT Date: 12/14/11 12:22



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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Friday December 09, 2011

Report Number: L549668

Samples Received: 12/03/11

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 09, 2011

Date Received : December 03, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-12211  
 Collected By : CJG  
 Collection Date : 12/02/11 13:08

ESC Sample # : L549668-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.4	0.71	2.0	mg/kg	J	3060A/7	12/07/11	1
Chromium,Trivalent	11.	0.17	2.0	mg/kg		Calc.	12/07/11	1
ORP	73.			mV		2580	12/05/11	1
pH	8.9			su		9045D	12/06/11	1
Sodium Adsorption Ratio	8.8					Calc.	12/08/11	1
Specific Conductance	1700			umhos/cm		9050AMo	12/07/11	1
Mercury	0.016	0.0015	0.020	mg/kg	J	7471	12/06/11	1
Arsenic	3.5	0.32	1.0	mg/kg		6010B	12/07/11	1
Barium	200	0.050	0.25	mg/kg		6010B	12/07/11	1
Cadmium	0.23	0.040	0.25	mg/kg	J	6010B	12/07/11	1
Chromium	12.	0.085	0.50	mg/kg		6010B	12/07/11	1
Copper	22.	0.21	1.0	mg/kg		6010B	12/07/11	1
Lead	12.	0.090	0.25	mg/kg		6010B	12/07/11	1
Nickel	15.	0.26	1.0	mg/kg		6010B	12/07/11	1
Selenium	3.7	0.32	1.0	mg/kg		6010B	12/07/11	1
Silver	1.3	0.16	0.50	mg/kg		6010B	12/07/11	1
Zinc	48.	0.34	1.5	mg/kg		6010B	12/07/11	1
TPH (GC/FID) Low Fraction	4.0	0.25	0.50	mg/kg		8015D/G	12/05/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.8			% Rec.		602/801	12/05/11	5
Benzene	0.17	0.017	0.050	mg/kg		8260B	12/04/11	50
Toluene	0.52	0.016	0.25	mg/kg		8260B	12/04/11	50
Ethylbenzene	0.047	0.019	0.050	mg/kg	J	8260B	12/04/11	50
Total Xylenes	0.59	0.023	0.15	mg/kg		8260B	12/04/11	50
Surrogate Recovery				% Rec.				
Toluene-d8	95.7			% Rec.		8260B	12/04/11	50
Dibromofluoromethane	94.8			% Rec.		8260B	12/04/11	50
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	12/04/11	50
4-Bromofluorobenzene	108.			% Rec.		8260B	12/04/11	50
TPH (GC/FID) High Fraction	450	15.	80.	mg/kg		3546/DR	12/06/11	20
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	12/06/11	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 12/08/11 16:52 Revised: 12/09/11 08:46  
 L549668-01 (PH) - 8.86@19.7c



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 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 09, 2011

Date Received : December 03, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-12211  
 Collected By : CJG  
 Collection Date : 12/02/11 13:08

ESC Sample # : L549668-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.018	0.015	0.12	mg/kg	J	8270C-S	12/06/11	20
Acenaphthene	0.021	0.014	0.12	mg/kg	J	8270C-S	12/06/11	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	12/06/11	20
Benzo(a)anthracene	U	0.018	0.12	mg/kg		8270C-S	12/06/11	20
Benzo(a)pyrene	0.020	0.012	0.12	mg/kg	J	8270C-S	12/06/11	20
Benzo(b)fluoranthene	0.020	0.016	0.12	mg/kg	J	8270C-S	12/06/11	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	12/06/11	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	12/06/11	20
Chrysene	0.035	0.022	0.12	mg/kg	J	8270C-S	12/06/11	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	12/06/11	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	12/06/11	20
Fluorene	0.074	0.011	0.12	mg/kg	J	8270C-S	12/06/11	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	12/06/11	20
Naphthalene	0.27	0.013	0.12	mg/kg		8270C-S	12/06/11	20
Phenanthrene	0.15	0.015	0.12	mg/kg		8270C-S	12/06/11	20
Pyrene	0.026	0.012	0.12	mg/kg	J	8270C-S	12/06/11	20
1-Methylnaphthalene	0.21	0.016	0.12	mg/kg		8270C-S	12/06/11	20
2-Methylnaphthalene	0.69	0.012	0.12	mg/kg		8270C-S	12/06/11	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	12/06/11	20
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	12/06/11	20
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	12/06/11	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	12/06/11	20

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 Note:

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Reported: 12/08/11 16:52 Revised: 12/09/11 08:46  
 L549668-01 (PH) - 8.86@19.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L549668-01	WG568659	SAMP	Cadmium	R1958632	J
	WG568375	SAMP	o-Terphenyl	R1956353	J7
	WG568504	SAMP	Chromium, Hexavalent	R1957474	J
	WG568361	SAMP	Mercury	R1955994	J
	WG568402	SAMP	Ethylbenzene	R1954714	J
	WG568373	SAMP	Anthracene	R1956232	J
	WG568373	SAMP	Acenaphthene	R1956232	J
	WG568373	SAMP	Benzo(a)pyrene	R1956232	J
	WG568373	SAMP	Benzo(b)fluoranthene	R1956232	J
	WG568373	SAMP	Chrysene	R1956232	J
	WG568373	SAMP	Fluorene	R1956232	J
	WG568373	SAMP	Pyrene	R1956232	J
	WG568373	SAMP	Nitrobenzene-d5	R1956232	J7
	WG568373	SAMP	2-Fluorobiphenyl	R1956232	J7
	WG568373	SAMP	p-Terphenyl-d14	R1956232	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

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.



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Monday December 19, 2011

Report Number: L550534

Samples Received: 12/08/11

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 19, 2011

Date Received : December 08, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-12711  
 Collected By : EB  
 Collection Date : 12/07/11 11:45

ESC Sample # : L550534-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	2.0	0.71	2.0	mg/kg	JP1	3060A/7	12/13/11	1
Chromium,Trivalent	12.	0.17	2.0	mg/kg		Calc.	12/10/11	1
ORP	27.			mV	T8	2580	12/15/11	1
pH	8.4			su	T8	9045D	12/13/11	1
Sodium Adsorption Ratio	40.					Calc.	12/15/11	1
Specific Conductance	2000			umhos/cm		9050AMo	12/09/11	1
Mercury	0.019	0.0015	0.020	mg/kg	J	7471	12/12/11	1
Arsenic	2.4	0.32	1.0	mg/kg		6010B	12/10/11	1
Barium	260	0.050	0.25	mg/kg		6010B	12/10/11	1
Cadmium	0.38	0.040	0.25	mg/kg		6010B	12/10/11	1
Chromium	14.	0.085	0.50	mg/kg		6010B	12/10/11	1
Copper	18.	0.21	1.0	mg/kg		6010B	12/10/11	1
Lead	9.9	0.090	0.25	mg/kg		6010B	12/10/11	1
Nickel	8.7	0.26	1.0	mg/kg		6010B	12/10/11	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	12/11/11	5
Silver	0.92	0.16	0.50	mg/kg		6010B	12/10/11	1
Zinc	52.	0.34	1.5	mg/kg		6010B	12/10/11	1
TPH (GC/FID) Low Fraction	45.	5.0	10.	mg/kg		8015D/G	12/09/11	100
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	102.			% Rec.		602/801	12/09/11	100
Benzene	0.30	0.034	0.10	mg/kg		8260B	12/09/11	100
Toluene	0.73	0.031	0.50	mg/kg		8260B	12/09/11	100
Ethylbenzene	0.043	0.037	0.10	mg/kg	J	8260B	12/09/11	100
Total Xylenes	0.61	0.046	0.30	mg/kg		8260B	12/09/11	100
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	12/09/11	100
Dibromofluoromethane	106.			% Rec.		8260B	12/09/11	100
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	12/09/11	100
4-Bromofluorobenzene	111.			% Rec.		8260B	12/09/11	100
TPH (GC/FID) High Fraction	880	7.7	40.	mg/kg		3546/DR	12/13/11	10
Surrogate recovery(%) o-Terphenyl	5130			% Rec.	J1	3546/DR	12/13/11	10

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 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 12/19/11 14:36 Printed: 12/19/11 14:36  
 L550534-01 (DRO) - second extraction confirms  
 L550534-01 (PH) - 8.43@18.7c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 19, 2011

Date Received : December 08, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-12711  
 Collected By : EB  
 Collection Date : 12/07/11 11:45

ESC Sample # : L550534-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.053	0.0038	0.030	mg/kg		8270C-S	12/17/11	5
Acenaphthene	0.078	0.0035	0.030	mg/kg		8270C-S	12/17/11	5
Acenaphthylene	0.0077	0.0029	0.030	mg/kg	J	8270C-S	12/17/11	5
Benzo(a)anthracene	0.11	0.0046	0.030	mg/kg		8270C-S	12/17/11	5
Benzo(a)pyrene	0.026	0.0031	0.030	mg/kg	J	8270C-S	12/17/11	5
Benzo(b)fluoranthene	0.051	0.0041	0.030	mg/kg		8270C-S	12/17/11	5
Benzo(g,h,i)perylene	0.021	0.0062	0.030	mg/kg	J	8270C-S	12/17/11	5
Benzo(k)fluoranthene	U	0.0067	0.030	mg/kg		8270C-S	12/17/11	5
Chrysene	0.073	0.0055	0.030	mg/kg		8270C-S	12/17/11	5
Dibenz(a,h)anthracene	0.030	0.0056	0.030	mg/kg	J	8270C-S	12/17/11	5
Fluoranthene	0.026	0.0052	0.030	mg/kg	J	8270C-S	12/17/11	5
Fluorene	0.30	0.0028	0.030	mg/kg		8270C-S	12/17/11	5
Indeno(1,2,3-cd)pyrene	0.014	0.0058	0.030	mg/kg	J	8270C-S	12/17/11	5
Naphthalene	0.89	0.0032	0.030	mg/kg		8270C-S	12/17/11	5
Phenanthrene	0.68	0.0037	0.030	mg/kg		8270C-S	12/17/11	5
Pyrene	0.026	0.0030	0.030	mg/kg	J	8270C-S	12/17/11	5
1-Methylnaphthalene	0.53	0.0039	0.030	mg/kg		8270C-S	12/17/11	5
2-Methylnaphthalene	2.2	0.0029	0.030	mg/kg	E	8270C-S	12/17/11	5
2-Chloronaphthalene	U	0.0030	0.030	mg/kg		8270C-S	12/17/11	5
Surrogate Recovery								
Nitrobenzene-d5	32.7			% Rec.		8270C-S	12/17/11	5
2-Fluorobiphenyl	78.1			% Rec.		8270C-S	12/17/11	5
p-Terphenyl-d14	144.			% Rec.	J1	8270C-S	12/17/11	5

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 12/19/11 14:36 Printed: 12/19/11 14:36  
 L550534-01 (DRO) - second extraction confirms  
 L550534-01 (PH) - 8.43@18.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L550534-01	WG569207	SAMP	Selenium	R1961674	O
	WG569759	SAMP	o-Terphenyl	R1965575	J1
	WG569158	SAMP	Chromium, Hexavalent	R1964852	JP1
	WG569338	SAMP	Mercury	R1962713	J
	WG569200	SAMP	Ethylbenzene	R1962434	J
	WG569660	SAMP	pH	R1964696	T8
	WG570316	SAMP	Acenaphthylene	R1971492	J
	WG570316	SAMP	Benzo(a)pyrene	R1971492	J
	WG570316	SAMP	Benzo(g,h,i)perylene	R1971492	J
	WG570316	SAMP	Dibenz(a,h)anthracene	R1971492	J
	WG570316	SAMP	Fluoranthene	R1971492	J
	WG570316	SAMP	Indeno(1,2,3-cd)pyrene	R1971492	J
	WG570316	SAMP	Pyrene	R1971492	J
	WG570316	SAMP	2-Methylnaphthalene	R1971492	E
	WG570316	SAMP	p-Terphenyl-d14	R1971492	J1
	WG569794	SAMP	ORP	R1967832	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
12/19/11 at 14:37:00

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L550534-01 Account: OXYGJCO Received: 12/08/11 09:00 Due Date: 12/15/11 00:00 RPT Date: 12/19/11 14:36



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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Wednesday January 04, 2012

Report Number: L550993

Samples Received: 12/10/11

Client Project: 900546.0013.010

Description: OXY Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 04, 2012

Date Received : December 10, 2011  
 Description : OXY Cuttings Sampling  
 Sample ID : MCDA-12911  
 Collected By : CJB  
 Collection Date : 12/09/11 10:15

ESC Sample # : L550993-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	12/14/11	1
Chromium,Trivalent	8.6	0.17	0.50	mg/kg		Calc.	01/03/12	1
ORP	160			mV	T8	2580	12/14/11	1
pH	8.7			su	T8	9045D	12/16/11	1
Sodium Adsorption Ratio	45.					Calc.	12/15/11	1
Specific Conductance	2500			umhos/cm		9050AMo	12/14/11	1
Mercury	0.014	0.0015	0.020	mg/kg	J	7471	12/14/11	1
Arsenic	3.3	0.32	1.0	mg/kg		6010B	01/03/12	1
Barium	420	0.050	0.25	mg/kg		6010B	01/03/12	1
Cadmium	0.21	0.040	0.25	mg/kg	J	6010B	01/03/12	1
Chromium	8.6	0.085	0.50	mg/kg		6010B	01/03/12	1
Copper	17.	0.21	1.0	mg/kg		6010B	01/03/12	1
Lead	9.9	0.090	0.25	mg/kg		6010B	01/03/12	1
Nickel	7.5	0.26	1.0	mg/kg		6010B	01/03/12	1
Selenium	2.3	0.32	1.0	mg/kg		6010B	01/03/12	1
Silver	1.2	0.16	0.50	mg/kg		6010B	01/03/12	1
Zinc	42.	0.34	1.5	mg/kg		6010B	01/03/12	1
TPH (GC/FID) Low Fraction	5.3	0.25	0.50	mg/kg		8015D/G	12/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	100.			% Rec.		602/801	12/12/11	5
Benzene	1.0	0.017	0.050	mg/kg		8260B	12/12/11	50
Toluene	1.1	0.016	0.25	mg/kg		8260B	12/12/11	50
Ethylbenzene	0.17	0.019	0.050	mg/kg		8260B	12/12/11	50
Total Xylenes	0.50	0.023	0.15	mg/kg		8260B	12/12/11	50
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	12/12/11	50
Dibromofluoromethane	97.2			% Rec.		8260B	12/12/11	50
a,a,a-Trifluorotoluene	109.			% Rec.		8260B	12/12/11	50
4-Bromofluorobenzene	109.			% Rec.		8260B	12/12/11	50
TPH (GC/FID) High Fraction	420	7.7	40.	mg/kg		3546/DR	12/13/11	10
Surrogate recovery(%) o-Terphenyl	3300			% Rec.	J1	3546/DR	12/13/11	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 01/04/12 16:06 Printed: 01/04/12 16:07  
 L550993-01 (PH) - 8.69@18.1c  
 L550993-01 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect.  
 L550993-01 (DRO) - second extraction confirms



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 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 04, 2012

Date Received : December 10, 2011  
 Description : OXY Cuttings Sampling  
 Sample ID : MCDA-12911  
 Collected By : CJB  
 Collection Date : 12/09/11 10:15

ESC Sample # : L550993-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.012	0.0076	0.060	mg/kg	J	8270C-S	12/12/11	10
Acenaphthene	0.037	0.0071	0.060	mg/kg	J	8270C-S	12/12/11	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	12/12/11	10
Benzo(a)anthracene	0.018	0.0092	0.060	mg/kg	J	8270C-S	12/12/11	10
Benzo(a)pyrene	0.021	0.0062	0.060	mg/kg	J	8270C-S	12/12/11	10
Benzo(b)fluoranthene	0.019	0.0082	0.060	mg/kg	J	8270C-S	12/12/11	10
Benzo(g,h,i)perylene	0.022	0.012	0.060	mg/kg	J	8270C-S	12/12/11	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	12/12/11	10
Chrysene	0.044	0.011	0.060	mg/kg	J	8270C-S	12/12/11	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	12/12/11	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	12/12/11	10
Fluorene	0.040	0.0055	0.060	mg/kg	J	8270C-S	12/12/11	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	12/12/11	10
Naphthalene	0.24	0.0065	0.060	mg/kg		8270C-S	12/12/11	10
Phenanthrene	0.093	0.0074	0.060	mg/kg		8270C-S	12/12/11	10
Pyrene	0.026	0.0059	0.060	mg/kg	J	8270C-S	12/12/11	10
1-Methylnaphthalene	0.20	0.0079	0.060	mg/kg		8270C-S	12/12/11	10
2-Methylnaphthalene	0.41	0.0059	0.060	mg/kg		8270C-S	12/12/11	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	12/12/11	10
Surrogate Recovery								
Nitrobenzene-d5	268.			% Rec.	J1	8270C-S	12/12/11	10
2-Fluorobiphenyl	75.5			% Rec.		8270C-S	12/12/11	10
p-Terphenyl-d14	252.			% Rec.	J1	8270C-S	12/12/11	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
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 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 01/04/12 16:06 Printed: 01/04/12 16:07  
 L550993-01 (PH) - 8.69@18.1c  
 L550993-01 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect.  
 L550993-01 (DRO) - second extraction confirms

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L550993-01	WG572651	SAMP	Cadmium	R1988453	J
	WG569759	SAMP	o-Terphenyl	R1965575	J1
	WG569574	SAMP	Mercury	R1965914	J
	WG570065	SAMP	pH	R1969016	T8
	WG569430	SAMP	Anthracene	R1962834	J
	WG569430	SAMP	Acenaphthene	R1962834	J
	WG569430	SAMP	Benzo(a)anthracene	R1962834	J
	WG569430	SAMP	Benzo(a)pyrene	R1962834	J
	WG569430	SAMP	Benzo(b)fluoranthene	R1962834	J
	WG569430	SAMP	Benzo(g,h,i)perylene	R1962834	J
	WG569430	SAMP	Chrysene	R1962834	J
	WG569430	SAMP	Fluorene	R1962834	J
	WG569430	SAMP	Pyrene	R1962834	J
	WG569430	SAMP	Nitrobenzene-d5	R1962834	J1
	WG569430	SAMP	p-Terphenyl-d14	R1962834	J1
	WG569963	SAMP	ORP	R1966952	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
01/04/12 at 16:07:12

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L550993-01 Account: OXYGJCO Received: 12/10/11 09:00 Due Date: 01/05/12 00:00 RPT Date: 01/04/12 16:06  
UNI 621312 dor 1/4/12



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Est. 1970

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Tuesday December 27, 2011

Report Number: L552050

Samples Received: 12/16/11

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

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REPORT OF ANALYSIS

Blair Rollins  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 27, 2011

Date Received : December 16, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-121311  
 Collected By : CJB  
 Collection Date : 12/13/11 10:30

ESC Sample # : L552050-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	12/22/11	1
Chromium,Trivalent	9.3	0.17	2.0	mg/kg		Calc.	12/17/11	1
ORP	45.			mV	T8	2580	12/22/11	1
pH	8.9			su	T8	9045D	12/23/11	1
Sodium Adsorption Ratio	48.					Calc.	12/20/11	1
Specific Conductance	2600			umhos/cm		9050AMo	12/20/11	1
Mercury	0.021	0.0015	0.020	mg/kg		7471	12/19/11	1
Arsenic	0.67	0.32	1.0	mg/kg	J	6010B	12/17/11	1
Barium	400	0.050	0.25	mg/kg		6010B	12/21/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	12/17/11	1
Chromium	9.3	0.085	0.50	mg/kg		6010B	12/17/11	1
Copper	18.	0.21	1.0	mg/kg		6010B	12/17/11	1
Lead	9.9	0.090	0.25	mg/kg		6010B	12/17/11	1
Nickel	12.	0.26	1.0	mg/kg		6010B	12/17/11	1
Selenium	2.5	0.32	1.0	mg/kg		6010B	12/17/11	1
Silver	0.36	0.16	0.50	mg/kg	J	6010B	12/17/11	1
Zinc	54.	0.34	1.5	mg/kg		6010B	12/17/11	1
TPH (GC/FID) Low Fraction	U	0.25	0.50	mg/kg		8015D/G	12/17/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.0			% Rec.		602/801	12/17/11	5
Benzene	0.081	0.0017	0.0050	mg/kg		8260B	12/17/11	5
Toluene	0.21	0.0016	0.025	mg/kg		8260B	12/17/11	5
Ethylbenzene	0.014	0.0019	0.0050	mg/kg		8260B	12/17/11	5
Total Xylenes	0.22	0.0023	0.015	mg/kg		8260B	12/17/11	5
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	12/17/11	5
Dibromofluoromethane	102.			% Rec.		8260B	12/17/11	5
a,a,a-Trifluorotoluene	105.			% Rec.		8260B	12/17/11	5
4-Bromofluorobenzene	88.8			% Rec.		8260B	12/17/11	5
TPH (GC/FID) High Fraction	350	0.77	4.0	mg/kg		3546/DR	12/21/11	1
Surrogate recovery(%) o-Terphenyl	83.5			% Rec.		3546/DR	12/21/11	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 12/27/11 17:48 Printed: 12/27/11 17:48  
 L552050-01 (PH) - 8.91@18.0c



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 Est. 1970

REPORT OF ANALYSIS

Blair Rollins  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 27, 2011

Date Received : December 16, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-121311  
 Collected By : CJB  
 Collection Date : 12/13/11 10:30

ESC Sample # : L552050-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0096	0.00076	0.0060	mg/kg		8270C-S	12/20/11	1
Acenaphthene	0.0093	0.00071	0.0060	mg/kg		8270C-S	12/20/11	1
Acenaphthylene	0.0036	0.00057	0.0060	mg/kg	J	8270C-S	12/20/11	1
Benzo(a)anthracene	U	0.00092	0.0060	mg/kg		8270C-S	12/20/11	1
Benzo(a)pyrene	0.0090	0.00062	0.0060	mg/kg		8270C-S	12/20/11	1
Benzo(b)fluoranthene	0.0070	0.00082	0.0060	mg/kg		8270C-S	12/20/11	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	12/20/11	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	12/20/11	1
Chrysene	U	0.0011	0.0060	mg/kg		8270C-S	12/20/11	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	12/20/11	1
Fluoranthene	0.0059	0.0010	0.0060	mg/kg	J	8270C-S	12/20/11	1
Fluorene	0.042	0.00055	0.0060	mg/kg		8270C-S	12/20/11	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	12/20/11	1
Naphthalene	0.10	0.00065	0.0060	mg/kg		8270C-S	12/20/11	1
Phenanthrene	0.071	0.00074	0.0060	mg/kg		8270C-S	12/20/11	1
Pyrene	0.0032	0.00059	0.0060	mg/kg	J	8270C-S	12/20/11	1
1-Methylnaphthalene	0.076	0.00079	0.0060	mg/kg		8270C-S	12/20/11	1
2-Methylnaphthalene	0.27	0.00059	0.0060	mg/kg		8270C-S	12/20/11	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	12/20/11	1
Surrogate Recovery								
Nitrobenzene-d5	150.			% Rec.	J1	8270C-S	12/20/11	1
2-Fluorobiphenyl	65.1			% Rec.		8270C-S	12/20/11	1
p-Terphenyl-d14	148.			% Rec.	J1	8270C-S	12/20/11	1

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 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 12/27/11 17:48 Printed: 12/27/11 17:48  
 L552050-01 (PH) - 8.91@18.0c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L552050-01	WG570438	SAMP	Arsenic	R1970212	J
	WG570438	SAMP	Silver	R1970212	J
	WG571397	SAMP	pH	R1978592	T8
	WG570429	SAMP	Acenaphthylene	R1972872	J
	WG570429	SAMP	Fluoranthene	R1972872	J
	WG570429	SAMP	Pyrene	R1972872	J
	WG570429	SAMP	Nitrobenzene-d5	R1972872	J1
	WG570429	SAMP	p-Terphenyl-d14	R1972872	J1
	WG571190	SAMP	ORP	R1977032	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
12/27/11 at 17:48:48

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L552050-01 Account: OXYGJCO Received: 12/16/11 09:00 Due Date: 12/23/11 00:00 RPT Date: 12/27/11 17:48



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Tax I.D. 62-0814289

Est. 1970

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Tuesday December 27, 2011

Report Number: L552659

Samples Received: 12/21/11

Client Project: 900546.0013.010

Description: Oxy Cuttings Samping

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

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, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Blair Rollins  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 27, 2011

Date Received : December 21, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-122011  
 Collected By : CJB  
 Collection Date : 12/20/11 13:00

ESC Sample # : L552659-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.2	0.71	2.0	mg/kg	J	3060A/7	12/24/11	1
Chromium,Trivalent	9.5	0.17	2.0	mg/kg		Calc.	12/23/11	1
ORP	24.			mV	T8	2580	12/22/11	1
pH	9.3			su	T8	9045D	12/23/11	1
Sodium Adsorption Ratio	43.					Calc.	12/23/11	1
Specific Conductance	1700			umhos/cm		9050AMo	12/23/11	1
Mercury	0.011	0.0015	0.020	mg/kg	J	7471	12/23/11	1
Arsenic	1.0	0.32	1.0	mg/kg		6010B	12/23/11	1
Barium	300	0.050	0.25	mg/kg		6010B	12/23/11	1
Cadmium	0.15	0.040	0.25	mg/kg	J	6010B	12/23/11	1
Chromium	11.	0.085	0.50	mg/kg		6010B	12/23/11	1
Copper	26.	0.21	1.0	mg/kg		6010B	12/23/11	1
Lead	9.2	0.090	0.25	mg/kg		6010B	12/23/11	1
Nickel	7.7	0.26	1.0	mg/kg		6010B	12/23/11	1
Selenium	1.8	0.32	1.0	mg/kg		6010B	12/23/11	1
Silver	0.50	0.16	0.50	mg/kg	J	6010B	12/23/11	1
Zinc	55.	0.34	1.5	mg/kg		6010B	12/23/11	1
TPH (GC/FID) Low Fraction	4.5	0.25	0.50	mg/kg		8015D/G	12/21/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.9			% Rec.		602/801	12/21/11	5
Benzene	0.021	0.0017	0.0050	mg/kg		8260B	12/21/11	5
Toluene	0.052	0.0016	0.025	mg/kg		8260B	12/21/11	5
Ethylbenzene	0.0060	0.0019	0.0050	mg/kg		8260B	12/21/11	5
Total Xylenes	0.056	0.0023	0.015	mg/kg		8260B	12/21/11	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	12/21/11	5
Dibromofluoromethane	106.			% Rec.		8260B	12/21/11	5
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	12/21/11	5
4-Bromofluorobenzene	92.1			% Rec.		8260B	12/21/11	5
TPH (GC/FID) High Fraction	410	7.7	40.	mg/kg		3546/DR	12/27/11	10
Surrogate recovery(%) o-Terphenyl	4050			% Rec.	J1	3546/DR	12/27/11	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 12/27/11 16:54 Printed: 12/27/11 16:54  
 L552659-01 (DRO) - Previous run also had high IS/SURR recovery. Matrix effect.  
 L552659-01 (PH) - 9.30@18.7c



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Est. 1970

REPORT OF ANALYSIS

Blair Rollins  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

December 27, 2011

Date Received : December 21, 2011  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-122011  
 Collected By : CJB  
 Collection Date : 12/20/11 13:00

ESC Sample # : L552659-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0011	0.00076	0.0060	mg/kg	J	8270C-S	12/23/11	1
Acenaphthene	0.0017	0.00071	0.0060	mg/kg	J	8270C-S	12/23/11	1
Acenaphthylene	0.0010	0.00057	0.0060	mg/kg	J	8270C-S	12/23/11	1
Benzo(a)anthracene	0.013	0.00092	0.0060	mg/kg		8270C-S	12/23/11	1
Benzo(a)pyrene	0.0036	0.00062	0.0060	mg/kg	J	8270C-S	12/23/11	1
Benzo(b)fluoranthene	U	0.00082	0.0060	mg/kg		8270C-S	12/23/11	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	12/23/11	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	12/23/11	1
Chrysene	0.021	0.0011	0.0060	mg/kg		8270C-S	12/23/11	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	12/23/11	1
Fluoranthene	0.0015	0.0010	0.0060	mg/kg	J	8270C-S	12/23/11	1
Fluorene	0.0092	0.00055	0.0060	mg/kg		8270C-S	12/23/11	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	12/23/11	1
Naphthalene	0.041	0.00065	0.0060	mg/kg		8270C-S	12/23/11	1
Phenanthrene	0.017	0.00074	0.0060	mg/kg		8270C-S	12/23/11	1
Pyrene	0.0014	0.00059	0.0060	mg/kg	J	8270C-S	12/23/11	1
1-Methylnaphthalene	0.032	0.00079	0.0060	mg/kg		8270C-S	12/23/11	1
2-Methylnaphthalene	0.066	0.00059	0.0060	mg/kg		8270C-S	12/23/11	1
2-Chloronaphthalene	0.00079	0.00060	0.0060	mg/kg	J	8270C-S	12/23/11	1
Surrogate Recovery								
Nitrobenzene-d5	64.3			% Rec.		8270C-S	12/23/11	1
2-Fluorobiphenyl	42.1			% Rec.		8270C-S	12/23/11	1
p-Terphenyl-d14	190.			% Rec.	J1	8270C-S	12/23/11	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 12/27/11 16:54 Printed: 12/27/11 16:54  
 L552659-01 (DRO) - Previous run also had high IS/SURR recovery. Matrix effect.  
 L552659-01 (PH) - 9.30@18.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L552659-01	WG571182	SAMP	Cadmium	R1978192	J
	WG571182	SAMP	Silver	R1978192	J
	WG571750	SAMP	o-Terphenyl	R1980674	J1
	WG571393	SAMP	Chromium,Hexavalent	R1978994	J
	WG571106	SAMP	Mercury	R1978332	J
	WG571397	SAMP	pH	R1978592	T8
	WG571175	SAMP	Anthracene	R1978252	J
	WG571175	SAMP	Acenaphthene	R1978252	J
	WG571175	SAMP	Acenaphthylene	R1978252	J
	WG571175	SAMP	Benzo(a)pyrene	R1978252	J
	WG571175	SAMP	Fluoranthene	R1978252	J
	WG571175	SAMP	Pyrene	R1978252	J
	WG571175	SAMP	2-Chloronaphthalene	R1978252	J
	WG571175	SAMP	p-Terphenyl-d14	R1978252	J1
	WG571190	SAMP	ORP	R1977032	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
12/27/11 at 16:54:33

TSR Signing Reports: 134  
R4 - Rush: Three Day

Sample: L552659-01 Account: OXYGJCO Received: 12/21/11 09:00 Due Date: 12/27/11 00:00 RPT Date: 12/27/11 16:54



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Friday January 20, 2012

Report Number: L555241

Samples Received: 01/11/12

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 20, 2012

Date Received : January 11, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC11012  
 Collected By : CJB  
 Collection Date : 01/10/12 10:08

ESC Sample # : L555241-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.6	0.71	2.0	mg/kg	J	3060A/7	01/13/12	1
Chromium,Trivalent	13.	0.17	0.50	mg/kg		Calc.	01/19/12	1
ORP	39.			mV		2580	01/12/12	1
pH	9.6			su		9045D	01/13/12	1
Sodium Adsorption Ratio	56.					Calc.	01/13/12	1
Specific Conductance	3500			umhos/cm		9050AMo	01/14/12	1
Mercury	0.018	0.00080	0.020	mg/kg	J	7471	01/12/12	1
Arsenic	3.5	0.32	1.0	mg/kg		6010B	01/19/12	1
Barium	230	0.050	0.25	mg/kg		6010B	01/19/12	1
Cadmium	0.078	0.040	0.25	mg/kg	J	6010B	01/19/12	1
Chromium	15.	0.085	0.50	mg/kg		6010B	01/19/12	1
Copper	16.	0.21	1.0	mg/kg		6010B	01/19/12	1
Lead	9.3	0.090	0.25	mg/kg		6010B	01/19/12	1
Nickel	12.	0.26	1.0	mg/kg		6010B	01/19/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	01/19/12	1
Silver	0.64	0.16	0.50	mg/kg		6010B	01/19/12	1
Zinc	44.	0.34	1.5	mg/kg		6010B	01/19/12	1
TPH (GC/FID) Low Fraction	2.7	0.25	0.50	mg/kg		8015D/G	01/12/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.0			% Rec.		602/801	01/12/12	5
Benzene	0.034	0.0017	0.0050	mg/kg		8260B	01/12/12	5
Toluene	0.048	0.0016	0.025	mg/kg		8260B	01/12/12	5
Ethylbenzene	0.0034	0.0019	0.0050	mg/kg	J	8260B	01/12/12	5
Total Xylenes	0.043	0.0023	0.015	mg/kg		8260B	01/12/12	5
Surrogate Recovery				% Rec.				
Toluene-d8	96.5			% Rec.		8260B	01/12/12	5
Dibromofluoromethane	111.			% Rec.		8260B	01/12/12	5
a,a,a-Trifluorotoluene	89.5			% Rec.		8260B	01/12/12	5
4-Bromofluorobenzene	83.2			% Rec.		8260B	01/12/12	5
TPH (GC/FID) High Fraction	650	15.	80.	mg/kg		3546/DR	01/13/12	20
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	01/13/12	20

U = ND (Not Detected)  
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 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 01/20/12 17:02 Printed: 01/20/12 17:02  
 L555241-01 (PH) - 9.6@17.5c



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 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 20, 2012

Date Received : January 11, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC11012  
 Collected By : CJB  
 Collection Date : 01/10/12 10:08

ESC Sample # : L555241-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.023	0.00076	0.0060	mg/kg		8270C-S	01/19/12	1
Acenaphthene	0.026	0.00071	0.0060	mg/kg		8270C-S	01/19/12	1
Acenaphthylene	0.0095	0.00057	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(a)anthracene	0.053	0.0092	0.060	mg/kg	J	8270C-S	01/20/12	10
Benzo(a)pyrene	0.021	0.00062	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(b)fluoranthene	0.037	0.00082	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(g,h,i)perylene	0.0080	0.0012	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	01/19/12	1
Chrysene	0.095	0.011	0.060	mg/kg		8270C-S	01/20/12	10
Dibenz(a,h)anthracene	0.010	0.0011	0.0060	mg/kg		8270C-S	01/19/12	1
Fluoranthene	U	0.0010	0.0060	mg/kg		8270C-S	01/19/12	1
Fluorene	0.093	0.00055	0.0060	mg/kg		8270C-S	01/19/12	1
Indeno(1,2,3-cd)pyrene	0.0049	0.0012	0.0060	mg/kg	J	8270C-S	01/19/12	1
Naphthalene	0.37	0.00065	0.0060	mg/kg		8270C-S	01/19/12	1
Phenanthrene	0.26	0.00074	0.0060	mg/kg		8270C-S	01/19/12	1
Pyrene	0.032	0.0059	0.060	mg/kg	J	8270C-S	01/20/12	10
1-Methylnaphthalene	0.16	0.00079	0.0060	mg/kg		8270C-S	01/19/12	1
2-Methylnaphthalene	0.73	0.00059	0.0060	mg/kg		8270C-S	01/19/12	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	01/19/12	1
Surrogate Recovery								
Nitrobenzene-d5	86.4			% Rec.		8270C-S	01/19/12	1
2-Fluorobiphenyl	46.3			% Rec.		8270C-S	01/19/12	1
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	01/20/12	10

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 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 01/20/12 17:02 Printed: 01/20/12 17:02  
 L555241-01 (PH) - 9.6@17.5c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L555241-01	WG573678	SAMP	Cadmium	R2006874	J
	WG573863	SAMP	o-Terphenyl	R2000613	J7
	WG573528	SAMP	Chromium, Hexavalent	R1999352	J
	WG573667	SAMP	Mercury	R1997554	J
	WG573791	SAMP	Ethylbenzene	R1998037	J
	WG574664	SAMP	Benzo(a)anthracene	R2005653	J
	WG574664	SAMP	Indeno(1,2,3-cd)pyrene	R2005653	J
	WG574664	SAMP	Pyrene	R2005653	J
	WG574664	SAMP	p-Terphenyl-d14	R2005653	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

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  
01/20/12 at 17:02:48

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L555241-01 Account: OXYGJCO Received: 01/11/12 09:00 Due Date: 01/19/12 00:00 RPT Date: 01/20/12 17:02



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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Sunday January 15, 2012

Report Number: L554751

Samples Received: 01/06/12

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 15, 2012

Date Received : January 06, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-CM-1512  
 Collected By : CJB  
 Collection Date : 01/05/12 10:00

ESC Sample # : L554751-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.1	0.71	2.0	mg/kg	J	3060A/7	01/13/12	1
Chromium,Trivalent	14.	0.17	2.0	mg/kg		Calc.	01/08/12	1
ORP	5.0			mV	T8	2580	01/10/12	1
pH	10.			su	T8	9045D	01/09/12	1
Sodium Adsorption Ratio	30.					Calc.	01/11/12	1
Specific Conductance	2400			umhos/cm		9050AMo	01/10/12	1
Mercury	0.013	0.00080	0.020	mg/kg	J	7471	01/10/12	1
Arsenic	6.6	0.32	1.0	mg/kg	J3	6010B	01/09/12	1
Barium	310	0.050	0.25	mg/kg	V	6010B	01/08/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	01/08/12	1
Chromium	15.	0.085	0.50	mg/kg		6010B	01/08/12	1
Copper	20.	0.21	1.0	mg/kg		6010B	01/08/12	1
Lead	9.7	0.090	0.25	mg/kg		6010B	01/08/12	1
Nickel	12.	0.26	1.0	mg/kg		6010B	01/08/12	1
Selenium	1.3	0.32	1.0	mg/kg		6010B	01/08/12	1
Silver	U	0.16	0.50	mg/kg		6010B	01/08/12	1
Zinc	50.	0.34	1.5	mg/kg		6010B	01/08/12	1
TPH (GC/FID) Low Fraction	6.4	0.25	0.50	mg/kg		8015D/G	01/08/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	93.4			% Rec.		602/801	01/08/12	5
Benzene	0.012	0.0017	0.0050	mg/kg		8260B	01/08/12	5
Toluene	0.026	0.0016	0.025	mg/kg		8260B	01/08/12	5
Ethylbenzene	0.0054	0.0019	0.0050	mg/kg		8260B	01/08/12	5
Total Xylenes	0.040	0.0023	0.015	mg/kg		8260B	01/08/12	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	01/08/12	5
Dibromofluoromethane	91.5			% Rec.		8260B	01/08/12	5
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	01/08/12	5
4-Bromofluorobenzene	109.			% Rec.		8260B	01/08/12	5
TPH (GC/FID) High Fraction	250	0.77	4.0	mg/kg		3546/DR	01/11/12	1
Surrogate recovery(%) o-Terphenyl	2050			% Rec.	J1	3546/DR	01/11/12	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 01/15/12 15:47 Printed: 01/15/12 15:47  
 L554751-01 (DRO) - Previous run also had high SURR recovery. Matrix effect.  
 L554751-01 (PH) - 10.33@17.6c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 15, 2012

Date Received : January 06, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-CM-1512  
 Collected By : CJB  
 Collection Date : 01/05/12 10:00

ESC Sample # : L554751-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	01/11/12	20
Acenaphthene	U	0.014	0.12	mg/kg		8270C-S	01/11/12	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	01/11/12	20
Benzo(a)anthracene	U	0.018	0.12	mg/kg		8270C-S	01/11/12	20
Benzo(a)pyrene	0.019	0.012	0.12	mg/kg	J	8270C-S	01/11/12	20
Benzo(b)fluoranthene	U	0.016	0.12	mg/kg		8270C-S	01/11/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	01/11/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	01/11/12	20
Chrysene	U	0.022	0.12	mg/kg		8270C-S	01/11/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	01/11/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	01/11/12	20
Fluorene	0.034	0.011	0.12	mg/kg	J	8270C-S	01/11/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	01/11/12	20
Naphthalene	0.19	0.013	0.12	mg/kg		8270C-S	01/11/12	20
Phenanthrene	0.068	0.015	0.12	mg/kg	J	8270C-S	01/11/12	20
Pyrene	0.020	0.012	0.12	mg/kg	J	8270C-S	01/11/12	20
1-Methylnaphthalene	0.16	0.016	0.12	mg/kg		8270C-S	01/11/12	20
2-Methylnaphthalene	0.34	0.012	0.12	mg/kg		8270C-S	01/11/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	01/11/12	20
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	01/11/12	20
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	01/11/12	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	01/11/12	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 01/15/12 15:47 Printed: 01/15/12 15:47  
 L554751-01 (DRO) - Previous run also had high SURR recovery. Matrix effect.  
 L554751-01 (PH) - 10.33@17.6c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L554751-01	WG573181	SAMP	Arsenic	R1992713	J3
	WG573181	SAMP	Barium	R1992713	V
	WG573544	SAMP	o-Terphenyl	R1996993	J1
	WG573528	SAMP	Chromium,Hexavalent	R1999352	J
	WG573149	SAMP	Mercury	R1994836	J
	WG573142	SAMP	pH	R1993172	T8
	WG573134	SAMP	Benzo(a)pyrene	R1995752	J
	WG573134	SAMP	Fluorene	R1995752	J
	WG573134	SAMP	Phenanthrene	R1995752	J
	WG573134	SAMP	Pyrene	R1995752	J
	WG573134	SAMP	Nitrobenzene-d5	R1995752	J7
	WG573134	SAMP	2-Fluorobiphenyl	R1995752	J7
	WG573134	SAMP	p-Terphenyl-d14	R1995752	J7
	WG573400	SAMP	ORP	R1994952	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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  
01/15/12 at 15:47:25

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L554751-01 Account: OXYGJCO Received: 01/06/12 09:00 Due Date: 01/13/12 00:00 RPT Date: 01/15/12 15:47



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Monday January 23, 2012

Report Number: L555699

Samples Received: 01/13/12

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

January 23, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : January 13, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC-11212  
 Collected By : CJB  
 Collection Date : 01/12/12 10:17

ESC Sample # : L555699-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.5	0.71	2.0	mg/kg	J	3060A/7	01/18/12	1
Chromium,Trivalent	18.	0.17	2.0	mg/kg		Calc.	01/18/12	1
ORP	14.			mV	T8	2580	01/16/12	1
pH	10.			su	T8	9045D	01/16/12	1
Sodium Adsorption Ratio	19.					Calc.	01/15/12	1
Specific Conductance	2200			umhos/cm		9050AMo	01/14/12	1
Mercury	0.019	0.00080	0.020	mg/kg	J	7471	01/16/12	1
Arsenic	6.7	0.32	1.0	mg/kg		6010B	01/18/12	1
Barium	310	0.050	0.25	mg/kg		6010B	01/18/12	1
Cadmium	0.57	0.040	0.25	mg/kg		6010B	01/18/12	1
Chromium	20.	0.085	0.50	mg/kg		6010B	01/18/12	1
Copper	22.	0.21	1.0	mg/kg		6010B	01/18/12	1
Lead	9.8	0.090	0.25	mg/kg		6010B	01/18/12	1
Nickel	11.	0.26	1.0	mg/kg		6010B	01/18/12	1
Selenium	1.6	0.32	1.0	mg/kg		6010B	01/19/12	1
Silver	0.40	0.16	0.50	mg/kg	J	6010B	01/18/12	1
Zinc	45.	0.34	1.5	mg/kg		6010B	01/18/12	1
TPH (GC/FID) Low Fraction	5.3	0.25	0.50	mg/kg	J6	8015D/G	01/13/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	85.3			% Rec.		602/801	01/13/12	5
Benzene	0.18	0.0017	0.0050	mg/kg		8260B	01/17/12	5
Toluene	0.22	0.0016	0.025	mg/kg		8260B	01/17/12	5
Ethylbenzene	0.043	0.0019	0.0050	mg/kg		8260B	01/17/12	5
Total Xylenes	0.23	0.0023	0.015	mg/kg		8260B	01/17/12	5
Surrogate Recovery								
Toluene-d8	109.			% Rec.		8260B	01/17/12	5
Dibromofluoromethane	102.			% Rec.		8260B	01/17/12	5
a,a,a-Trifluorotoluene	99.0			% Rec.		8260B	01/17/12	5
4-Bromofluorobenzene	99.2			% Rec.		8260B	01/17/12	5
TPH (GC/FID) High Fraction	270	7.7	40.	mg/kg		3546/DR	01/19/12	10
Surrogate recovery(%) o-Terphenyl	1500			% Rec.	J1	3546/DR	01/19/12	10

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 Note:

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Reported: 01/23/12 12:21 Printed: 01/23/12 12:21  
 L555699-01 (PH) - 10.23@18.5c  
 L555699-01 (DRO) - second extraction confirms high surrogate



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 23, 2012

Date Received : January 13, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC-11212  
 Collected By : CJB  
 Collection Date : 01/12/12 10:17

ESC Sample # : L555699-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	01/19/12	20
Acenaphthene	0.028	0.014	0.12	mg/kg	J	8270C-S	01/19/12	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	01/19/12	20
Benzo(a)anthracene	0.023	0.018	0.12	mg/kg	J	8270C-S	01/19/12	20
Benzo(a)pyrene	0.014	0.012	0.12	mg/kg	J	8270C-S	01/19/12	20
Benzo(b)fluoranthene	U	0.016	0.12	mg/kg		8270C-S	01/19/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	01/19/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	01/19/12	20
Chrysene	0.023	0.022	0.12	mg/kg	J	8270C-S	01/19/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	01/19/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	01/19/12	20
Fluorene	0.056	0.011	0.12	mg/kg	J	8270C-S	01/19/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	01/19/12	20
Naphthalene	0.34	0.013	0.12	mg/kg		8270C-S	01/19/12	20
Phenanthrene	0.13	0.015	0.12	mg/kg		8270C-S	01/19/12	20
Pyrene	0.044	0.012	0.12	mg/kg	J	8270C-S	01/19/12	20
1-Methylnaphthalene	0.25	0.016	0.12	mg/kg		8270C-S	01/19/12	20
2-Methylnaphthalene	0.60	0.012	0.12	mg/kg		8270C-S	01/19/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	01/19/12	20
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	01/19/12	20
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	01/19/12	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	01/19/12	20

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Reported: 01/23/12 12:21 Printed: 01/23/12 12:21  
 L555699-01 (PH) - 10.23@18.5c  
 L555699-01 (DRO) - second extraction confirms high surrogate

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L555699-01	WG574055	SAMP	Silver	R2004352	J
	WG574793	SAMP	o-Terphenyl	R2007272	J1
	WG574151	SAMP	Chromium,Hexavalent	R2004073	J
	WG574025	SAMP	Mercury	R2001214	J
	WG573988	SAMP	TPH (GC/FID) Low Fraction	R2000753	J6
	WG574150	SAMP	pH	R2001872	T8
	WG574348	SAMP	Acenaphthene	R2005373	J
	WG574348	SAMP	Benzo(a)anthracene	R2005373	J
	WG574348	SAMP	Benzo(a)pyrene	R2005373	J
	WG574348	SAMP	Chrysene	R2005373	J
	WG574348	SAMP	Fluorene	R2005373	J
	WG574348	SAMP	Pyrene	R2005373	J
	WG574348	SAMP	Nitrobenzene-d5	R2005373	J7
	WG574348	SAMP	2-Fluorobiphenyl	R2005373	J7
	WG574348	SAMP	p-Terphenyl-d14	R2005373	J7
	WG574134	SAMP	ORP	R2001194	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
01/23/12 at 12:21:34

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L555699-01 Account: OXYGJCO Received: 01/13/12 09:00 Due Date: 01/20/12 00:00 RPT Date: 01/23/12 12:21



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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Wednesday January 25, 2012

Report Number: L556270

Samples Received: 01/18/12

Client Project: 900546.0013.010

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 25, 2012

Date Received : January 18, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC-11712  
 Collected By : CJB  
 Collection Date : 01/17/12 12:00

ESC Sample # : L556270-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	0.88	0.71	2.0	mg/kg	J	3060A/7	01/25/12	1
Chromium,Trivalent	46.	0.17	0.50	mg/kg		Calc.	01/22/12	1
ORP	-65.			mV	T8	2580	01/20/12	1
pH	8.7			su		9045D	01/23/12	1
Sodium Adsorption Ratio	16.					Calc.	01/21/12	1
Specific Conductance	1400			umhos/cm		9050AMo	01/21/12	1
Mercury	0.014	0.00080	0.020	mg/kg	J	7471	01/20/12	1
Arsenic	6.4	0.32	1.0	mg/kg		6010B	01/22/12	1
Barium	330	0.050	0.25	mg/kg		6010B	01/22/12	1
Cadmium	0.38	0.040	0.25	mg/kg		6010B	01/22/12	1
Chromium	47.	0.085	0.50	mg/kg		6010B	01/22/12	1
Copper	12.	0.21	1.0	mg/kg		6010B	01/22/12	1
Lead	7.3	0.090	0.25	mg/kg		6010B	01/22/12	1
Nickel	20.	0.26	1.0	mg/kg		6010B	01/22/12	1
Selenium	0.97	0.32	1.0	mg/kg	J	6010B	01/22/12	1
Silver	U	0.16	0.50	mg/kg		6010B	01/22/12	1
Zinc	40.	0.34	1.5	mg/kg		6010B	01/22/12	1
TPH (GC/FID) Low Fraction	2.4	0.25	0.50	mg/kg		8015D/G	01/19/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.4			% Rec.		602/801	01/19/12	5
Benzene	0.024	0.0017	0.0050	mg/kg		8260B	01/18/12	5
Toluene	0.049	0.0016	0.025	mg/kg		8260B	01/18/12	5
Ethylbenzene	0.014	0.0019	0.0050	mg/kg		8260B	01/18/12	5
Total Xylenes	0.081	0.0023	0.015	mg/kg		8260B	01/18/12	5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	01/18/12	5
Dibromofluoromethane	97.3			% Rec.		8260B	01/18/12	5
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	01/18/12	5
4-Bromofluorobenzene	103.			% Rec.		8260B	01/18/12	5
TPH (GC/FID) High Fraction	630	7.7	40.	mg/kg		3546/DR	01/25/12	10
Surrogate recovery(%) o-Terphenyl	2940			% Rec.	J1	3546/DR	01/25/12	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 01/25/12 14:55 Printed: 01/25/12 14:55  
 L556270-01 (DRO) - high surrogate confirms with original extraction  
 L556270-01 (PH) - 8.7@20.2c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 25, 2012

Date Received : January 18, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MC-11712  
 Collected By : CJB  
 Collection Date : 01/17/12 12:00

ESC Sample # : L556270-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0033	0.00076	0.0060	mg/kg	J	8270C-S	01/19/12	1
Acenaphthene	0.0068	0.00071	0.0060	mg/kg		8270C-S	01/19/12	1
Acenaphthylene	0.0017	0.00057	0.0060	mg/kg	J	8270C-S	01/19/12	1
Benzo(a)anthracene	U	0.00092	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(a)pyrene	0.0054	0.00062	0.0060	mg/kg	J	8270C-S	01/19/12	1
Benzo(b)fluoranthene	U	0.00082	0.0060	mg/kg		8270C-S	01/19/12	1
Benzo(g,h,i)perylene	0.0022	0.0012	0.0060	mg/kg	J	8270C-S	01/19/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	01/19/12	1
Chrysene	0.0065	0.0011	0.0060	mg/kg		8270C-S	01/19/12	1
Dibenz(a,h)anthracene	0.0015	0.0011	0.0060	mg/kg	J	8270C-S	01/19/12	1
Fluoranthene	0.0040	0.0010	0.0060	mg/kg	J	8270C-S	01/19/12	1
Fluorene	0.017	0.00055	0.0060	mg/kg		8270C-S	01/19/12	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	01/19/12	1
Naphthalene	0.10	0.00065	0.0060	mg/kg		8270C-S	01/19/12	1
Phenanthrene	0.040	0.00074	0.0060	mg/kg		8270C-S	01/19/12	1
Pyrene	0.0079	0.00059	0.0060	mg/kg		8270C-S	01/19/12	1
1-Methylnaphthalene	0.057	0.00079	0.0060	mg/kg		8270C-S	01/19/12	1
2-Methylnaphthalene	0.17	0.00059	0.0060	mg/kg		8270C-S	01/19/12	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	01/19/12	1
Surrogate Recovery								
Nitrobenzene-d5	77.6			% Rec.		8270C-S	01/19/12	1
2-Fluorobiphenyl	65.4			% Rec.		8270C-S	01/19/12	1
p-Terphenyl-d14	90.7			% Rec.		8270C-S	01/19/12	1

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Reported: 01/25/12 14:55 Printed: 01/25/12 14:55  
 L556270-01 (DRO) - high surrogate confirms with original extraction  
 L556270-01 (PH) - 8.7@20.2c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L556270-01	WG574678	SAMP	Selenium	R2008932	J
	WG575371	SAMP	o-Terphenyl	R2011958	J1
	WG575114	SAMP	Chromium,Hexavalent	R2011892	J
	WG574728	SAMP	Mercury	R2007556	J
	WG574664	SAMP	Anthracene	R2005653	J
	WG574664	SAMP	Acenaphthylene	R2005653	J
	WG574664	SAMP	Benzo(a)pyrene	R2005653	J
	WG574664	SAMP	Benzo(g,h,i)perylene	R2005653	J
	WG574664	SAMP	Dibenz(a,h)anthracene	R2005653	J
	WG574664	SAMP	Fluoranthene	R2005653	J
	WG574897	SAMP	ORP	R2007754	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
01/25/12 at 14:55:34

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L556270-01 Account: OXYGJCO Received: 01/18/12 09:00 Due Date: 01/25/12 00:00 RPT Date: 01/25/12 14:55



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Monday February 20, 2012

Report Number: L559381

Samples Received: 02/08/12

Client Project:

Description: MCDA

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA1 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:25

ESC Sample # : L559381-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.3	0.71	2.0	mg/kg	J	3060A/7	02/11/12	1
Chromium,Trivalent	8.4	0.17	2.0	mg/kg		Calc.	02/09/12	1
ORP	49.			mV		2580	02/10/12	1
pH	9.7			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	34.					Calc.	02/10/12	1
Specific Conductance	2400			umhos/cm		9050AMo	02/10/12	1
Mercury	0.017	0.00080	0.020	mg/kg	J	7471	02/10/12	1
Arsenic	3.6	0.32	1.0	mg/kg		6010B	02/09/12	1
Barium	200	0.050	0.25	mg/kg		6010B	02/09/12	1
Cadmium	0.16	0.040	0.25	mg/kg	J	6010B	02/09/12	1
Chromium	9.7	0.085	0.50	mg/kg		6010B	02/09/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/09/12	1
Lead	9.2	0.090	0.25	mg/kg		6010B	02/09/12	1
Nickel	9.6	0.26	1.0	mg/kg		6010B	02/09/12	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/09/12	5
Silver	U	0.16	0.50	mg/kg		6010B	02/09/12	1
Zinc	39.	0.34	1.5	mg/kg		6010B	02/09/12	1
TPH (GC/FID) Low Fraction	2.9	0.25	0.50	mg/kg		8015D/G	02/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.8			% Rec.		602/801	02/09/12	5
Benzene	0.081	0.0017	0.0050	mg/kg		8260B	02/08/12	5
Toluene	0.087	0.0016	0.025	mg/kg		8260B	02/08/12	5
Ethylbenzene	0.0077	0.0019	0.0050	mg/kg		8260B	02/08/12	5
Total Xylenes	0.12	0.0023	0.015	mg/kg		8260B	02/09/12	5
Surrogate Recovery								
Toluene-d8	94.5			% Rec.		8260B	02/08/12	5
Dibromofluoromethane	103.			% Rec.		8260B	02/08/12	5
a,a,a-Trifluorotoluene	97.0			% Rec.		8260B	02/08/12	5
4-Bromofluorobenzene	85.5			% Rec.		8260B	02/08/12	5
TPH (GC/FID) High Fraction	820	7.7	40.	mg/kg		3546/DR	02/10/12	10
Surrogate recovery(%) o-Terphenyl	8070			% Rec.	J1	3546/DR	02/10/12	10

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-01 (PH) - 9.7@18.8c  
 L559381-01 (DRO) - 2nd extraction confirms high surrogate



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA1 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:25

ESC Sample # : L559381-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.033	0.0076	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthene	0.035	0.0071	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthylene	0.0079	0.0057	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(a)anthracene	0.056	0.0092	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(a)pyrene	0.036	0.0062	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(b)fluoranthene	0.036	0.0082	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(g,h,i)perylene	0.019	0.012	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	02/15/12	10
Chrysene	0.13	0.011	0.060	mg/kg		8270C-S	02/15/12	10
Dibenz(a,h)anthracene	0.015	0.011	0.060	mg/kg	J	8270C-S	02/15/12	10
Fluoranthene	0.038	0.010	0.060	mg/kg	J	8270C-S	02/15/12	10
Fluorene	0.12	0.0055	0.060	mg/kg		8270C-S	02/15/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Naphthalene	0.70	0.0065	0.060	mg/kg		8270C-S	02/15/12	10
Phenanthrene	0.30	0.0074	0.060	mg/kg		8270C-S	02/15/12	10
Pyrene	0.064	0.0059	0.060	mg/kg		8270C-S	02/15/12	10
1-Methylnaphthalene	0.45	0.0079	0.060	mg/kg		8270C-S	02/15/12	10
2-Methylnaphthalene	1.4	0.0059	0.060	mg/kg		8270C-S	02/15/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/15/12	10
Surrogate Recovery								
Nitrobenzene-d5	158.			% Rec.	J1	8270C-S	02/15/12	10
2-Fluorobiphenyl	70.0			% Rec.		8270C-S	02/15/12	10
p-Terphenyl-d14	168.			% Rec.	J1	8270C-S	02/15/12	10

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 L559381-01 (PH) - 9.7@18.8c  
 L559381-01 (DRO) - 2nd extraction confirms high surrogate



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REPORT OF ANALYSIS

February 20, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA2 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:44

ESC Sample # : L559381-02  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg	J6J3	3060A/7	02/11/12	1
Chromium,Trivalent	19.	0.17	2.0	mg/kg		Calc.	02/09/12	1
ORP	54.			mV		2580	02/10/12	1
pH	10.			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	16.					Calc.	02/10/12	1
Specific Conductance	1500			umhos/cm		9050AMo	02/10/12	1
Mercury	0.015	0.00080	0.020	mg/kg	J	7471	02/10/12	1
Arsenic	7.0	0.32	1.0	mg/kg		6010B	02/09/12	1
Barium	350	0.050	0.25	mg/kg		6010B	02/09/12	1
Cadmium	0.18	0.040	0.25	mg/kg	J	6010B	02/09/12	1
Chromium	19.	0.085	0.50	mg/kg		6010B	02/09/12	1
Copper	20.	0.21	1.0	mg/kg		6010B	02/09/12	1
Lead	9.6	0.090	0.25	mg/kg		6010B	02/09/12	1
Nickel	12.	0.26	1.0	mg/kg		6010B	02/09/12	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/09/12	5
Silver	U	0.16	0.50	mg/kg		6010B	02/09/12	1
Zinc	40.	0.34	1.5	mg/kg		6010B	02/09/12	1
TPH (GC/FID) Low Fraction	1.8	0.25	0.50	mg/kg		8015D/G	02/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.5			% Rec.		602/801	02/09/12	5
Benzene	0.016	0.0017	0.0050	mg/kg		8260B	02/08/12	5
Toluene	0.031	0.0016	0.025	mg/kg		8260B	02/08/12	5
Ethylbenzene	0.0088	0.0019	0.0050	mg/kg		8260B	02/08/12	5
Total Xylenes	0.10	0.0023	0.015	mg/kg		8260B	02/08/12	5
Surrogate Recovery								
Toluene-d8	97.3			% Rec.		8260B	02/08/12	5
Dibromofluoromethane	108.			% Rec.		8260B	02/08/12	5
a,a,a-Trifluorotoluene	99.7			% Rec.		8260B	02/08/12	5
4-Bromofluorobenzene	102.			% Rec.		8260B	02/08/12	5
TPH (GC/FID) High Fraction	350	7.7	40.	mg/kg		3546/DR	02/10/12	10
Surrogate recovery(%) o-Terphenyl	2350			% Rec.	J1	3546/DR	02/10/12	10

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 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-02 (DRO) - 2nd extraction confirms high surrogate  
 L559381-02 (PH) - 10@18.7c



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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA2 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:44

ESC Sample # : L559381-02  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0091	0.0076	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthene	U	0.0071	0.060	mg/kg		8270C-S	02/15/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(a)anthracene	0.015	0.0092	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(a)pyrene	0.013	0.0062	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(b)fluoranthene	0.015	0.0082	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	02/15/12	10
Chrysene	0.024	0.011	0.060	mg/kg	J	8270C-S	02/15/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/15/12	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	02/15/12	10
Fluorene	0.047	0.0055	0.060	mg/kg	J	8270C-S	02/15/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Naphthalene	0.27	0.0065	0.060	mg/kg		8270C-S	02/15/12	10
Phenanthrene	0.075	0.0074	0.060	mg/kg		8270C-S	02/15/12	10
Pyrene	0.023	0.0059	0.060	mg/kg	J	8270C-S	02/15/12	10
1-Methylnaphthalene	0.20	0.0079	0.060	mg/kg		8270C-S	02/15/12	10
2-Methylnaphthalene	0.55	0.0059	0.060	mg/kg		8270C-S	02/15/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/15/12	10
Surrogate Recovery								
Nitrobenzene-d5	160.			% Rec.	J1	8270C-S	02/15/12	10
2-Fluorobiphenyl	77.3			% Rec.		8270C-S	02/15/12	10
p-Terphenyl-d14	154.			% Rec.	J1	8270C-S	02/15/12	10

U = ND (Not Detected)  
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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-02 (DRO) - 2nd extraction confirms high surrogate  
 L559381-02 (PH) - 10@18.7c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA3 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:49

ESC Sample # : L559381-03  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.3	0.71	2.0	mg/kg	J	3060A/7	02/11/12	1
Chromium,Trivalent	22.	0.17	2.0	mg/kg		Calc.	02/09/12	1
ORP	58.			mV		2580	02/10/12	1
pH	9.1			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	17.					Calc.	02/10/12	1
Specific Conductance	1300			umhos/cm		9050AMo	02/10/12	1
Mercury	0.017	0.00080	0.020	mg/kg	J	7471	02/10/12	1
Arsenic	6.9	0.32	1.0	mg/kg		6010B	02/09/12	1
Barium	350	0.050	0.25	mg/kg		6010B	02/09/12	1
Cadmium	0.23	0.040	0.25	mg/kg	J	6010B	02/09/12	1
Chromium	23.	0.085	0.50	mg/kg		6010B	02/09/12	1
Copper	19.	0.21	1.0	mg/kg		6010B	02/09/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/09/12	1
Nickel	14.	0.26	1.0	mg/kg		6010B	02/09/12	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/09/12	5
Silver	U	0.16	0.50	mg/kg		6010B	02/09/12	1
Zinc	46.	0.34	1.5	mg/kg		6010B	02/09/12	1
TPH (GC/FID) Low Fraction	11.	0.25	0.50	mg/kg		8015D/G	02/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	104.			% Rec.		602/801	02/09/12	5
Benzene	0.023	0.0017	0.0050	mg/kg		8260B	02/09/12	5
Toluene	0.064	0.0016	0.025	mg/kg		8260B	02/09/12	5
Ethylbenzene	0.029	0.0019	0.0050	mg/kg		8260B	02/09/12	5
Total Xylenes	0.49	0.0023	0.015	mg/kg		8260B	02/09/12	5
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/09/12	5
Dibromofluoromethane	97.6			% Rec.		8260B	02/09/12	5
a,a,a-Trifluorotoluene	106.			% Rec.		8260B	02/09/12	5
4-Bromofluorobenzene	107.			% Rec.		8260B	02/09/12	5
TPH (GC/FID) High Fraction	240	7.7	40.	mg/kg		3546/DR	02/10/12	10
Surrogate recovery(%) o-Terphenyl	1550			% Rec.	J1	3546/DR	02/10/12	10

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-03 (DRO) - 2nd extraction confirms high surrogate  
 L559381-03 (PH) - 9.1@18.4c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA3 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:49

ESC Sample # : L559381-03

Site ID : MCDA

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.017	0.0076	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthene	0.0095	0.0071	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(a)anthracene	0.044	0.0092	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(a)pyrene	0.030	0.0062	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(b)fluoranthene	0.020	0.0082	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(g,h,i)perylene	0.014	0.012	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	02/15/12	10
Chrysene	0.074	0.011	0.060	mg/kg		8270C-S	02/15/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/15/12	10
Fluoranthene	0.014	0.010	0.060	mg/kg	J	8270C-S	02/15/12	10
Fluorene	0.088	0.0055	0.060	mg/kg		8270C-S	02/15/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Naphthalene	0.58	0.0065	0.060	mg/kg		8270C-S	02/16/12	10
Phenanthrene	0.12	0.0074	0.060	mg/kg		8270C-S	02/15/12	10
Pyrene	0.045	0.0059	0.060	mg/kg	J	8270C-S	02/15/12	10
1-Methylnaphthalene	0.37	0.0079	0.060	mg/kg		8270C-S	02/16/12	10
2-Methylnaphthalene	1.2	0.0059	0.060	mg/kg		8270C-S	02/16/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/16/12	10
Surrogate Recovery								
Nitrobenzene-d5	90.4			% Rec.		8270C-S	02/16/12	10
2-Fluorobiphenyl	94.4			% Rec.		8270C-S	02/15/12	10
p-Terphenyl-d14	179.			% Rec.	J1	8270C-S	02/15/12	10

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-03 (DRO) - 2nd extraction confirms high surrogate  
 L559381-03 (PH) - 9.1@18.4c



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REPORT OF ANALYSIS

February 20, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA4 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:55

ESC Sample # : L559381-04  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	02/11/12	1
Chromium,Trivalent	32.	0.17	2.0	mg/kg		Calc.	02/09/12	1
ORP	61.			mV		2580	02/10/12	1
pH	8.7			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	3.4					Calc.	02/10/12	1
Specific Conductance	810			umhos/cm		9050AMo	02/10/12	1
Mercury	0.021	0.00080	0.020	mg/kg		7471	02/10/12	1
Arsenic	8.5	0.32	1.0	mg/kg		6010B	02/09/12	1
Barium	300	0.050	0.25	mg/kg		6010B	02/09/12	1
Cadmium	0.15	0.040	0.25	mg/kg	J	6010B	02/09/12	1
Chromium	32.	0.085	0.50	mg/kg		6010B	02/09/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/09/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/09/12	1
Nickel	20.	0.26	1.0	mg/kg		6010B	02/09/12	1
Selenium	0.51	0.32	1.0	mg/kg	J	6010B	02/09/12	1
Silver	U	0.16	0.50	mg/kg		6010B	02/09/12	1
Zinc	50.	0.34	1.5	mg/kg		6010B	02/09/12	1
TPH (GC/FID) Low Fraction	5.4	0.25	0.50	mg/kg		8015D/G	02/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	102.			% Rec.		602/801	02/09/12	5
Benzene	0.0071	0.0017	0.0050	mg/kg		8260B	02/08/12	5
Toluene	0.020	0.0016	0.025	mg/kg	J	8260B	02/08/12	5
Ethylbenzene	0.0078	0.0019	0.0050	mg/kg		8260B	02/08/12	5
Total Xylenes	0.17	0.0023	0.015	mg/kg		8260B	02/08/12	5
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	02/08/12	5
Dibromofluoromethane	105.			% Rec.		8260B	02/08/12	5
a,a,a-Trifluorotoluene	99.5			% Rec.		8260B	02/08/12	5
4-Bromofluorobenzene	99.9			% Rec.		8260B	02/08/12	5
TPH (GC/FID) High Fraction	35.	0.77	4.0	mg/kg		3546/DR	02/10/12	1
Surrogate recovery(%) o-Terphenyl	147.			% Rec.		3546/DR	02/10/12	1

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-04 (SV8270PAHSIM) - Dilution due to matrix  
 L559381-04 (PH) - 8.7@18.8c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA4 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 11:55

ESC Sample # : L559381-04  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0038	0.00076	0.0060	mg/kg	J	8270C-S	02/15/12	1
Acenaphthene	0.0090	0.00071	0.0060	mg/kg		8270C-S	02/15/12	1
Acenaphthylene	0.0031	0.00057	0.0060	mg/kg	J	8270C-S	02/15/12	1
Benzo(a)anthracene	U	0.0092	0.060	mg/kg	O	8270C-S	02/16/12	10
Benzo(a)pyrene	U	0.0062	0.060	mg/kg	O	8270C-S	02/16/12	10
Benzo(b)fluoranthene	U	0.0082	0.060	mg/kg	O	8270C-S	02/16/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg	O	8270C-S	02/16/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg	O	8270C-S	02/16/12	10
Chrysene	U	0.011	0.060	mg/kg	O	8270C-S	02/16/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg	O	8270C-S	02/16/12	10
Fluoranthene	0.0027	0.0010	0.0060	mg/kg	J	8270C-S	02/15/12	1
Fluorene	0.036	0.00055	0.0060	mg/kg		8270C-S	02/15/12	1
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg	O	8270C-S	02/16/12	10
Naphthalene	0.35	0.00065	0.0060	mg/kg	E	8270C-S	02/15/12	1
Phenanthrene	0.028	0.00074	0.0060	mg/kg		8270C-S	02/15/12	1
Pyrene	U	0.0059	0.060	mg/kg	O	8270C-S	02/16/12	10
1-Methylnaphthalene	0.20	0.00079	0.0060	mg/kg		8270C-S	02/15/12	1
2-Methylnaphthalene	0.70	0.00059	0.0060	mg/kg	E	8270C-S	02/15/12	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	02/15/12	1
Surrogate Recovery								
Nitrobenzene-d5	104.			% Rec.		8270C-S	02/15/12	1
2-Fluorobiphenyl	72.8			% Rec.		8270C-S	02/15/12	1
p-Terphenyl-d14	105.			% Rec.		8270C-S	02/16/12	10

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:52  
 L559381-04 (SV8270PAHSIM) - Dilution due to matrix  
 L559381-04 (PH) - 8.7@18.8c



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REPORT OF ANALYSIS

February 20, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA5 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 12:02

ESC Sample # : L559381-05  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.4	0.71	2.0	mg/kg	J	3060A/7	02/11/12	1
Chromium,Trivalent	20.	0.17	2.0	mg/kg		Calc.	02/09/12	1
ORP	57.			mV		2580	02/10/12	1
pH	9.5			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	16.					Calc.	02/10/12	1
Specific Conductance	1700			umhos/cm		9050AMo	02/10/12	1
Mercury	0.016	0.00080	0.020	mg/kg	J	7471	02/10/12	1
Arsenic	13.	0.32	1.0	mg/kg		6010B	02/09/12	1
Barium	360	0.050	0.25	mg/kg		6010B	02/09/12	1
Cadmium	0.20	0.040	0.25	mg/kg	J	6010B	02/09/12	1
Chromium	22.	0.085	0.50	mg/kg		6010B	02/09/12	1
Copper	20.	0.21	1.0	mg/kg		6010B	02/09/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/09/12	1
Nickel	16.	0.26	1.0	mg/kg		6010B	02/09/12	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/09/12	5
Silver	U	0.16	0.50	mg/kg		6010B	02/09/12	1
Zinc	45.	0.34	1.5	mg/kg		6010B	02/09/12	1
TPH (GC/FID) Low Fraction	5.1	0.25	0.50	mg/kg		8015D/G	02/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	102.			% Rec.		602/801	02/09/12	5
Benzene	0.029	0.0017	0.0050	mg/kg		8260B	02/08/12	5
Toluene	0.058	0.0016	0.025	mg/kg		8260B	02/08/12	5
Ethylbenzene	0.017	0.0019	0.0050	mg/kg		8260B	02/08/12	5
Total Xylenes	0.10	0.0023	0.015	mg/kg		8260B	02/08/12	5
Surrogate Recovery								
Toluene-d8	96.7			% Rec.		8260B	02/08/12	5
Dibromofluoromethane	100.			% Rec.		8260B	02/08/12	5
a,a,a-Trifluorotoluene	100.			% Rec.		8260B	02/08/12	5
4-Bromofluorobenzene	93.0			% Rec.		8260B	02/08/12	5
TPH (GC/FID) High Fraction	180	7.7	40.	mg/kg		3546/DR	02/10/12	10
Surrogate recovery(%) o-Terphenyl	1320			% Rec.	J1	3546/DR	02/10/12	10

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Reported: 02/20/12 15:52 Printed: 02/20/12 15:53  
 L559381-05 (DRO) - 2nd extraction confirms high surrogate  
 L559381-05 (PH) - 9.5@18.2c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 08, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA5 8-10 IN  
 Collected By : Brennen Graff  
 Collection Date : 02/07/12 12:02

ESC Sample # : L559381-05  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0078	0.0076	0.060	mg/kg	J	8270C-S	02/15/12	10
Acenaphthene	U	0.0071	0.060	mg/kg		8270C-S	02/15/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(a)anthracene	0.019	0.0092	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(a)pyrene	0.0092	0.0062	0.060	mg/kg	J	8270C-S	02/15/12	10
Benzo(b)fluoranthene	U	0.0082	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	02/15/12	10
Chrysene	0.021	0.011	0.060	mg/kg	J	8270C-S	02/15/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/15/12	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	02/15/12	10
Fluorene	0.030	0.0055	0.060	mg/kg	J	8270C-S	02/15/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/15/12	10
Naphthalene	0.19	0.0065	0.060	mg/kg		8270C-S	02/15/12	10
Phenanthrene	0.059	0.0074	0.060	mg/kg	J	8270C-S	02/15/12	10
Pyrene	0.017	0.0059	0.060	mg/kg	J	8270C-S	02/15/12	10
1-Methylnaphthalene	0.14	0.0079	0.060	mg/kg		8270C-S	02/15/12	10
2-Methylnaphthalene	0.34	0.0059	0.060	mg/kg		8270C-S	02/15/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/15/12	10
Surrogate Recovery								
Nitrobenzene-d5	139.			% Rec.		8270C-S	02/15/12	10
2-Fluorobiphenyl	69.8			% Rec.		8270C-S	02/15/12	10
p-Terphenyl-d14	164.			% Rec.	J1	8270C-S	02/15/12	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 02/20/12 15:52 Printed: 02/20/12 15:53  
 L559381-05 (DRO) - 2nd extraction confirms high surrogate  
 L559381-05 (PH) - 9.5@18.2c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier	
L559381-01	WG577641	SAMP	Cadmium	R2031094	J	
	WG577641	SAMP	Selenium	R2031094	O	
	WG578007	SAMP	o-Terphenyl	R2033512	J1	
	WG577704	SAMP	Chromium, Hexavalent	R2032812	J	
	WG577835	SAMP	Mercury	R2032933	J	
	WG577771	SAMP	pH	R2031372	T8	
	WG577653	SAMP	Anthracene	R2031335	J	
	WG577653	SAMP	Acenaphthene	R2031335	J	
	WG577653	SAMP	Acenaphthylene	R2031335	J	
	WG577653	SAMP	Benzo(a)anthracene	R2031335	J	
	WG577653	SAMP	Benzo(a)pyrene	R2031335	J	
	WG577653	SAMP	Benzo(b)fluoranthene	R2031335	J	
	WG577653	SAMP	Benzo(g,h,i)perylene	R2031335	J	
	WG577653	SAMP	Dibenz(a,h)anthracene	R2031335	J	
	WG577653	SAMP	Fluoranthene	R2031335	J	
	WG577653	SAMP	Nitrobenzene-d5	R2031335	J1	
	WG577653	SAMP	p-Terphenyl-d14	R2031335	J1	
	L559381-02	WG577641	SAMP	Cadmium	R2031094	J
		WG577641	SAMP	Selenium	R2031094	O
		WG578007	SAMP	o-Terphenyl	R2033512	J1
WG577704		SAMP	Chromium, Hexavalent	R2032812	J6J3	
WG577835		SAMP	Mercury	R2032933	J	
WG577771		SAMP	pH	R2031372	T8	
WG577653		SAMP	Anthracene	R2031335	J	
WG577653		SAMP	Benzo(a)anthracene	R2031335	J	
WG577653		SAMP	Benzo(a)pyrene	R2031335	J	
WG577653		SAMP	Benzo(b)fluoranthene	R2031335	J	
WG577653		SAMP	Chrysene	R2031335	J	
WG577653		SAMP	Fluorene	R2031335	J	
WG577653		SAMP	Pyrene	R2031335	J	
WG577653		SAMP	Nitrobenzene-d5	R2031335	J1	
WG577653		SAMP	p-Terphenyl-d14	R2031335	J1	
L559381-03		WG577641	SAMP	Cadmium	R2031094	J
		WG577641	SAMP	Selenium	R2031094	O
		WG578007	SAMP	o-Terphenyl	R2033512	J1
		WG577704	SAMP	Chromium, Hexavalent	R2032812	J
		WG577835	SAMP	Mercury	R2032933	J
	WG577771	SAMP	pH	R2031372	T8	
	WG577653	SAMP	Anthracene	R2031335	J	
	WG577653	SAMP	Acenaphthene	R2031335	J	
	WG577653	SAMP	Benzo(a)anthracene	R2031335	J	
	WG577653	SAMP	Benzo(a)pyrene	R2031335	J	
	WG577653	SAMP	Benzo(b)fluoranthene	R2031335	J	
	WG577653	SAMP	Benzo(g,h,i)perylene	R2031335	J	
	WG577653	SAMP	Fluoranthene	R2031335	J	
	WG577653	SAMP	Pyrene	R2031335	J	
	WG577653	SAMP	p-Terphenyl-d14	R2031335	J1	
	L559381-04	WG577641	SAMP	Cadmium	R2031094	J
		WG577641	SAMP	Selenium	R2031094	J
		WG577617	SAMP	Toluene	R2030152	J
		WG577771	SAMP	pH	R2031372	T8
		WG577653	SAMP	Anthracene	R2031335	J
WG577653		SAMP	Acenaphthylene	R2031335	J	
WG577653		SAMP	Benzo(a)anthracene	R2031335	O	
WG577653		SAMP	Benzo(a)pyrene	R2031335	O	
WG577653		SAMP	Benzo(b)fluoranthene	R2031335	O	
WG577653		SAMP	Benzo(g,h,i)perylene	R2031335	O	
WG577653		SAMP	Benzo(k)fluoranthene	R2031335	O	
WG577653		SAMP	Chrysene	R2031335	O	
WG577653		SAMP	Dibenz(a,h)anthracene	R2031335	O	
WG577653		SAMP	Fluoranthene	R2031335	J	
WG577653		SAMP	Indeno(1,2,3-cd)pyrene	R2031335	O	
WG577653		SAMP	Naphthalene	R2031335	E	
WG577653		SAMP	Pyrene	R2031335	O	
WG577653		SAMP	2-Methylnaphthalene	R2031335	E	
L559381-05		WG577641	SAMP	Cadmium	R2031094	J
		WG577641	SAMP	Selenium	R2031094	O
	WG578007	SAMP	o-Terphenyl	R2033512	J1	
	WG577704	SAMP	Chromium, Hexavalent	R2032812	J	

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
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	WG577771	SAMP	pH	R2031372	T8
	WG577653	SAMP	Anthracene	R2031335	J
	WG577653	SAMP	Benzo(a)anthracene	R2031335	J
	WG577653	SAMP	Benzo(a)pyrene	R2031335	J
	WG577653	SAMP	Chrysene	R2031335	J
	WG577653	SAMP	Fluorene	R2031335	J
	WG577653	SAMP	Phenanthrene	R2031335	J
	WG577653	SAMP	Pyrene	R2031335	J
	WG577653	SAMP	p-Terphenyl-d14	R2031335	J1

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
02/20/12 at 15:53:01

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L559381-01 Account: OXYGJCO Received: 02/08/12 09:00 Due Date: 02/17/12 00:00 RPT Date: 02/20/12 15:52  
Sample: L559381-02 Account: OXYGJCO Received: 02/08/12 09:00 Due Date: 02/17/12 00:00 RPT Date: 02/20/12 15:52  
Sample: L559381-03 Account: OXYGJCO Received: 02/08/12 09:00 Due Date: 02/17/12 00:00 RPT Date: 02/20/12 15:52  
Sample: L559381-04 Account: OXYGJCO Received: 02/08/12 09:00 Due Date: 02/17/12 00:00 RPT Date: 02/20/12 15:52  
Sample: L559381-05 Account: OXYGJCO Received: 02/08/12 09:00 Due Date: 02/17/12 00:00 RPT Date: 02/20/12 15:52



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Monday January 30, 2012

Report Number: L556914

Samples Received: 01/21/12

Client Project: 900546.0013.010

Description: OXY Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

January 30, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : January 21, 2012  
 Description : OXY Cuttings Sampling  
 Sample ID : MCDA-MC-12012  
 Collected By : CJB  
 Collection Date : 01/20/12 10:48

ESC Sample # : L556914-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg	J6	3060A/7	01/26/12	1
Chromium,Trivalent	20.	0.17	2.0	mg/kg		Calc.	01/25/12	1
ORP	100			mV	T8	2580	01/24/12	1
pH	11.			su	T8	9045D	01/24/12	1
Sodium Adsorption Ratio	18.					Calc.	01/23/12	1
Specific Conductance	1700			umhos/cm		9050AMo	01/26/12	1
Mercury	0.0088	0.00080	0.020	mg/kg	J	7471	01/27/12	1
Arsenic	6.4	0.32	1.0	mg/kg		6010B	01/25/12	1
Barium	300	0.050	0.25	mg/kg		6010B	01/25/12	1
Cadmium	0.64	0.040	0.25	mg/kg		6010B	01/25/12	1
Chromium	20.	0.085	0.50	mg/kg		6010B	01/25/12	1
Copper	22.	0.21	1.0	mg/kg		6010B	01/25/12	1
Lead	12.	0.090	0.25	mg/kg		6010B	01/26/12	1
Nickel	13.	0.26	1.0	mg/kg		6010B	01/25/12	1
Selenium	2.3	0.32	1.0	mg/kg		6010B	01/25/12	1
Silver	U	0.16	0.50	mg/kg		6010B	01/25/12	1
Zinc	51.	0.34	1.5	mg/kg		6010B	01/25/12	1
TPH (GC/FID) Low Fraction	2.5	0.25	0.50	mg/kg		8015D/G	01/22/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.9			% Rec.		602/801	01/22/12	5
Benzene	0.055	0.0017	0.0050	mg/kg		8260B	01/23/12	5
Toluene	0.13	0.0016	0.025	mg/kg		8260B	01/23/12	5
Ethylbenzene	0.052	0.0019	0.0050	mg/kg		8260B	01/23/12	5
Total Xylenes	0.25	0.0023	0.015	mg/kg		8260B	01/23/12	5
Surrogate Recovery								
Toluene-d8	96.2			% Rec.		8260B	01/23/12	5
Dibromofluoromethane	81.4			% Rec.		8260B	01/23/12	5
a,a,a-Trifluorotoluene	93.8			% Rec.		8260B	01/23/12	5
4-Bromofluorobenzene	90.7			% Rec.		8260B	01/23/12	5
TPH (GC/FID) High Fraction	470	3.8	20.	mg/kg		3546/DR	01/26/12	5
Surrogate recovery(%) o-Terphenyl	2440			% Rec.	J1	3546/DR	01/26/12	5

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 01/30/12 14:57 Printed: 01/30/12 14:58  
 L556914-01 (PH) - 11@21.3c  
 L556914-01 (CR6) - sample is a reducer  
 L556914-01 (DRO) - high surrogate confirms with original extraction



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

January 30, 2012

Date Received : January 21, 2012  
 Description : OXY Cuttings Sampling  
 Sample ID : MCDA-MC-12012  
 Collected By : CJB  
 Collection Date : 01/20/12 10:48

ESC Sample # : L556914-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0076	0.060	mg/kg		8270C-S	01/27/12	10
Acenaphthene	0.0094	0.0071	0.060	mg/kg	J	8270C-S	01/27/12	10
Acenaphthylene	0.0080	0.0057	0.060	mg/kg	J	8270C-S	01/27/12	10
Benzo(a)anthracene	0.0092	0.0092	0.060	mg/kg	J	8270C-S	01/27/12	10
Benzo(a)pyrene	U	0.0062	0.060	mg/kg		8270C-S	01/27/12	10
Benzo(b)fluoranthene	U	0.0082	0.060	mg/kg		8270C-S	01/27/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	01/27/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	01/27/12	10
Chrysene	0.018	0.011	0.060	mg/kg	J	8270C-S	01/27/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	01/27/12	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	01/27/12	10
Fluorene	0.034	0.0055	0.060	mg/kg	J	8270C-S	01/27/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	01/27/12	10
Naphthalene	0.25	0.0065	0.060	mg/kg		8270C-S	01/27/12	10
Phenanthrene	0.071	0.0074	0.060	mg/kg		8270C-S	01/27/12	10
Pyrene	0.018	0.0059	0.060	mg/kg	J	8270C-S	01/27/12	10
1-Methylnaphthalene	0.19	0.0079	0.060	mg/kg		8270C-S	01/27/12	10
2-Methylnaphthalene	0.44	0.0059	0.060	mg/kg		8270C-S	01/27/12	10
2-Chloronaphthalene	0.026	0.0060	0.060	mg/kg	J	8270C-S	01/27/12	10
Surrogate Recovery								
Nitrobenzene-d5	63.3			% Rec.		8270C-S	01/27/12	10
2-Fluorobiphenyl	87.4			% Rec.		8270C-S	01/27/12	10
p-Terphenyl-d14	154.			% Rec.	J1	8270C-S	01/27/12	10

U = ND (Not Detected)  
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 Note:

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Reported: 01/30/12 14:57 Printed: 01/30/12 14:58  
 L556914-01 (PH) - 11@21.3c  
 L556914-01 (CR6) - sample is a reducer  
 L556914-01 (DRO) - high surrogate confirms with original extraction

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L556914-01	WG575680	SAMP	o-Terphenyl	R2013832	J1
	WG575518	SAMP	Chromium, Hexavalent	R2014213	J6
	WG575149	SAMP	Mercury	R2015252	J
	WG575378	SAMP	pH	R2011254	T8
	WG575818	SAMP	Acenaphthene	R2015612	J
	WG575818	SAMP	Acenaphthylene	R2015612	J
	WG575818	SAMP	Benzo(a)anthracene	R2015612	J
	WG575818	SAMP	Chrysene	R2015612	J
	WG575818	SAMP	Fluorene	R2015612	J
	WG575818	SAMP	Pyrene	R2015612	J
	WG575818	SAMP	2-Chloronaphthalene	R2015612	J
	WG575818	SAMP	p-Terphenyl-d14	R2015612	J1
	WG575446	SAMP	ORP	R2011675	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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

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- 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  
01/30/12 at 14:58:10

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L556914-01 Account: OXYGJCO Received: 01/21/12 12:46 Due Date: 01/27/12 00:00 RPT Date: 01/30/12 14:57



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Thursday February 09, 2012

Report Number: L558320

Samples Received: 02/01/12

Client Project: 900546.0013.010

Description: Oxy Cuttings Disposal

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 09, 2012

Date Received : February 01, 2012  
 Description : Oxy Cuttings Disposal  
 Sample ID : MCDA-PC-13112  
 Collected By : EJB  
 Collection Date : 01/31/12 10:00

ESC Sample # : L558320-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	02/08/12	1
Chromium,Trivalent	30.	0.17	2.0	mg/kg		Calc.	02/03/12	1
ORP	93.			mV	T8	2580	02/04/12	1
pH	11.			su	T8	9045D	02/02/12	1
Sodium Adsorption Ratio	4.7					Calc.	02/06/12	1
Specific Conductance	950			umhos/cm		9050AMo	02/04/12	1
Mercury	0.020	0.00080	0.020	mg/kg	J	7471	02/03/12	1
Arsenic	6.7	0.32	1.0	mg/kg		6010B	02/03/12	1
Barium	300	0.050	0.25	mg/kg		6010B	02/03/12	1
Cadmium	0.42	0.040	0.25	mg/kg		6010B	02/03/12	1
Chromium	30.	0.085	0.50	mg/kg		6010B	02/03/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/03/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/03/12	1
Nickel	18.	0.26	1.0	mg/kg		6010B	02/03/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/03/12	1
Silver	U	0.16	0.50	mg/kg		6010B	02/03/12	1
Zinc	51.	0.34	1.5	mg/kg		6010B	02/03/12	1
TPH (GC/FID) Low Fraction	14.	0.25	0.50	mg/kg		8015D/G	02/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.7			% Rec.		602/801	02/03/12	5
Benzene	0.0017	0.0017	0.0050	mg/kg	J	8260B	02/07/12	5
Toluene	0.0079	0.0016	0.025	mg/kg	J	8260B	02/07/12	5
Ethylbenzene	0.0067	0.0019	0.0050	mg/kg		8260B	02/07/12	5
Total Xylenes	0.16	0.0023	0.015	mg/kg		8260B	02/07/12	5
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/07/12	5
Dibromofluoromethane	114.			% Rec.		8260B	02/07/12	5
a,a,a-Trifluorotoluene	92.5			% Rec.		8260B	02/07/12	5
4-Bromofluorobenzene	101.			% Rec.		8260B	02/07/12	5
TPH (GC/FID) High Fraction	22.	0.77	4.0	mg/kg		3546/DR	02/02/12	1
Surrogate recovery(%) o-Terphenyl	127.			% Rec.		3546/DR	02/02/12	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 02/08/12 17:18 Revised: 02/09/12 08:35  
 L558320-01 (PH) - 11@20.4c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 09, 2012

Date Received : February 01, 2012  
 Description : Oxy Cuttings Disposal  
 Sample ID : MCDA-PC-13112  
 Collected By : EJB  
 Collection Date : 01/31/12 10:00

ESC Sample # : L558320-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.043	0.00076	0.0060	mg/kg		8270C-S	02/02/12	1
Acenaphthene	0.034	0.00071	0.0060	mg/kg		8270C-S	02/02/12	1
Acenaphthylene	0.015	0.00057	0.0060	mg/kg		8270C-S	02/02/12	1
Benzo(a)anthracene	U	0.00092	0.0060	mg/kg		8270C-S	02/02/12	1
Benzo(a)pyrene	0.00075	0.00062	0.0060	mg/kg	J	8270C-S	02/02/12	1
Benzo(b)fluoranthene	0.0014	0.00082	0.0060	mg/kg	J	8270C-S	02/02/12	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	02/02/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	02/02/12	1
Chrysene	0.0040	0.0011	0.0060	mg/kg	J	8270C-S	02/02/12	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	02/02/12	1
Fluoranthene	0.0024	0.0010	0.0060	mg/kg	J	8270C-S	02/02/12	1
Fluorene	0.16	0.00055	0.0060	mg/kg		8270C-S	02/02/12	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	02/02/12	1
Naphthalene	1.1	0.013	0.12	mg/kg		8270C-S	02/03/12	20
Phenanthrene	0.10	0.00074	0.0060	mg/kg		8270C-S	02/02/12	1
Pyrene	0.0048	0.00059	0.0060	mg/kg	J	8270C-S	02/02/12	1
1-Methylnaphthalene	0.70	0.016	0.12	mg/kg		8270C-S	02/03/12	20
2-Methylnaphthalene	2.5	0.012	0.12	mg/kg		8270C-S	02/03/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	02/03/12	20
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	02/03/12	20
2-Fluorobiphenyl	95.8			% Rec.		8270C-S	02/02/12	1
p-Terphenyl-d14	77.2			% Rec.		8270C-S	02/02/12	1

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Reported: 02/08/12 17:18 Revised: 02/09/12 08:35  
 L558320-01 (PH) - 11@20.4c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L558320-01	WG576827	SAMP	Mercury	R2024454	J
	WG577317	SAMP	Benzene	R2028332	J
	WG577317	SAMP	Toluene	R2028332	J
	WG576705	SAMP	pH	R2023232	T8
	WG576655	SAMP	Benzo(a)pyrene	R2024293	J
	WG576655	SAMP	Benzo(b)fluoranthene	R2024293	J
	WG576655	SAMP	Chrysene	R2024293	J
	WG576655	SAMP	Fluoranthene	R2024293	J
	WG576655	SAMP	Pyrene	R2024293	J
	WG576655	SAMP	Nitrobenzene-d5	R2024293	J7
	WG577048	SAMP	ORP	R2026052	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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.



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Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Tuesday February 14, 2012

Report Number: L559207

Samples Received: 02/07/12

Client Project: WA-000546-00013-LOTT

Description: MCDA

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
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REPORT OF ANALYSIS

February 14, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 07, 2012  
 Description : MCDA  
 Sample ID : MCDA-MPC-2312  
 Collected By : CJB  
 Collection Date : 02/03/12 11:20

ESC Sample # : L559207-01

Site ID :

Project # : WA-000546-00013-LOTT

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	0.88	0.71	2.0	mg/kg	J	3060A/7	02/10/12	1
Chromium,Trivalent	37.	0.17	2.0	mg/kg		Calc.	02/08/12	1
ORP	-69.			mV	T8	2580	02/08/12	1
pH	9.5			su	T8	9045D	02/09/12	1
Sodium Adsorption Ratio	2.5					Calc.	02/08/12	1
Specific Conductance	530			umhos/cm		9050AMo	02/08/12	1
Mercury	0.021	0.00080	0.020	mg/kg		7471	02/09/12	1
Arsenic	7.4	0.32	1.0	mg/kg		6010B	02/08/12	1
Barium	290	0.050	0.25	mg/kg		6010B	02/08/12	1
Cadmium	0.13	0.040	0.25	mg/kg	J	6010B	02/08/12	1
Chromium	38.	0.085	0.50	mg/kg		6010B	02/08/12	1
Copper	19.	0.21	1.0	mg/kg		6010B	02/10/12	1
Lead	13.	0.090	0.25	mg/kg		6010B	02/08/12	1
Nickel	21.	0.26	1.0	mg/kg		6010B	02/08/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/08/12	1
Silver	U	0.16	0.50	mg/kg		6010B	02/10/12	1
Zinc	55.	0.34	1.5	mg/kg		6010B	02/08/12	1
TPH (GC/FID) Low Fraction	14.	0.25	0.50	mg/kg		8015D/G	02/08/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.8			% Rec.		602/801	02/08/12	5
Benzene	0.0018	0.0017	0.0050	mg/kg	J	8260B	02/08/12	5
Toluene	0.060	0.0016	0.025	mg/kg		8260B	02/08/12	5
Ethylbenzene	0.042	0.0019	0.0050	mg/kg		8260B	02/08/12	5
Total Xylenes	1.1	0.0023	0.015	mg/kg		8260B	02/08/12	5
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	02/08/12	5
Dibromofluoromethane	105.			% Rec.		8260B	02/08/12	5
a,a,a-Trifluorotoluene	98.4			% Rec.		8260B	02/08/12	5
4-Bromofluorobenzene	114.			% Rec.		8260B	02/08/12	5
TPH (GC/FID) High Fraction	80.	0.77	4.0	mg/kg		3546/DR	02/08/12	1
Surrogate recovery(%) o-Terphenyl	97.0			% Rec.		3546/DR	02/08/12	1

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 MDL = Minimum Detection Limit = LOD  
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Reported: 02/14/12 11:29 Printed: 02/14/12 11:29  
 L559207-01 (PH) - 9.5@17.9c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 14, 2012

Date Received : February 07, 2012  
 Description : MCDA  
 Sample ID : MCDA-MPC-2312  
 Collected By : CJB  
 Collection Date : 02/03/12 11:20

ESC Sample # : L559207-01

Site ID :

Project # : WA-000546-00013-LOTT

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0017	0.00076	0.0060	mg/kg	J	8270C-S	02/10/12	1
Acenaphthene	0.0068	0.00071	0.0060	mg/kg		8270C-S	02/10/12	1
Acenaphthylene	0.0012	0.00057	0.0060	mg/kg	J	8270C-S	02/10/12	1
Benzo(a)anthracene	U	0.00092	0.0060	mg/kg		8270C-S	02/10/12	1
Benzo(a)pyrene	U	0.00062	0.0060	mg/kg		8270C-S	02/10/12	1
Benzo(b)fluoranthene	U	0.00082	0.0060	mg/kg		8270C-S	02/10/12	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	02/10/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	02/10/12	1
Chrysene	U	0.0011	0.0060	mg/kg		8270C-S	02/10/12	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	02/10/12	1
Fluoranthene	U	0.0010	0.0060	mg/kg		8270C-S	02/10/12	1
Fluorene	0.021	0.00055	0.0060	mg/kg		8270C-S	02/10/12	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	02/10/12	1
Naphthalene	0.29	0.00065	0.0060	mg/kg		8270C-S	02/10/12	1
Phenanthrene	0.015	0.00074	0.0060	mg/kg		8270C-S	02/10/12	1
Pyrene	0.0014	0.00059	0.0060	mg/kg	J	8270C-S	02/10/12	1
1-Methylnaphthalene	0.14	0.00079	0.0060	mg/kg		8270C-S	02/10/12	1
2-Methylnaphthalene	0.48	0.00059	0.0060	mg/kg	E	8270C-S	02/10/12	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	02/10/12	1
Surrogate Recovery								
Nitrobenzene-d5	107.			% Rec.		8270C-S	02/10/12	1
2-Fluorobiphenyl	80.5			% Rec.		8270C-S	02/10/12	1
p-Terphenyl-d14	163.			% Rec.	J1	8270C-S	02/10/12	1

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Reported: 02/14/12 11:29 Printed: 02/14/12 11:29  
 L559207-01 (PH) - 9.5@17.9c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L559207-01	WG577489	SAMP	Cadmium	R2030295	J
	WG577458	SAMP	Chromium, Hexavalent	R2032672	J
	WG577541	SAMP	Benzene	R2029492	J
	WG577454	SAMP	pH	R2031232	T8
	WG577330	SAMP	Anthracene	R2030535	J
	WG577330	SAMP	Acenaphthylene	R2030535	J
	WG577330	SAMP	Pyrene	R2030535	J
	WG577330	SAMP	2-Methylnaphthalene	R2030535	E
	WG577330	SAMP	p-Terphenyl-d14	R2030535	J1
	WG577518	SAMP	ORP	R2029932	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
02/14/12 at 11:29:50

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L559207-01 Account: OXYGJCO Received: 02/07/12 09:00 Due Date: 02/14/12 00:00 RPT Date: 02/14/12 11:29



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Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

### Report Summary

Monday February 20, 2012

Report Number: L560365

Samples Received: 02/14/12

Client Project:

Description: MCDA Sampling

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:

Mark W. Beasley , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Est. 1970

REPORT OF ANALYSIS

February 20, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 14, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA1  
 Collected By : Brennan Graff  
 Collection Date : 02/09/12 11:49

ESC Sample # : L560365-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.1	0.71	2.0	mg/kg	J	3060A/7	02/17/12	1
Chromium,Trivalent	25.	0.17	2.0	mg/kg		Calc.	02/15/12	1
ORP	18.			mV	T8	2580	02/15/12	1
pH	9.3			su	T8	9045D	02/15/12	1
Sodium Adsorption Ratio	8.5					Calc.	02/17/12	1
Specific Conductance	940			umhos/cm		9050AMo	02/17/12	1
Mercury	0.022	0.00080	0.020	mg/kg		7471	02/17/12	1
Arsenic	6.1	0.32	1.0	mg/kg		6010B	02/15/12	1
Barium	330	0.050	0.25	mg/kg		6010B	02/15/12	1
Cadmium	0.32	0.040	0.25	mg/kg		6010B	02/15/12	1
Chromium	26.	0.085	0.50	mg/kg		6010B	02/15/12	1
Copper	19.	0.21	1.0	mg/kg		6010B	02/15/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/15/12	1
Nickel	16.	0.26	1.0	mg/kg		6010B	02/15/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/15/12	1
Silver	U	0.16	0.50	mg/kg		6010B	02/15/12	1
Zinc	46.	0.34	1.5	mg/kg		6010B	02/15/12	1
TPH (GC/FID) Low Fraction	6.8	0.25	0.50	mg/kg		8015D/G	02/15/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	93.6			% Rec.		602/801	02/15/12	5
Benzene	0.014	0.0017	0.0050	mg/kg		8260B	02/15/12	5
Toluene	0.033	0.0016	0.025	mg/kg		8260B	02/15/12	5
Ethylbenzene	0.012	0.0019	0.0050	mg/kg		8260B	02/15/12	5
Total Xylenes	0.22	0.0023	0.015	mg/kg		8260B	02/15/12	5
Surrogate Recovery								
Toluene-d8	95.1			% Rec.		8260B	02/15/12	5
Dibromofluoromethane	94.7			% Rec.		8260B	02/15/12	5
a,a,a-Trifluorotoluene	95.2			% Rec.		8260B	02/15/12	5
4-Bromofluorobenzene	104.			% Rec.		8260B	02/15/12	5
TPH (GC/FID) High Fraction	480	38.	200	mg/kg		3546/DR	02/17/12	50
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	02/17/12	50

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 02/20/12 16:04 Printed: 02/20/12 16:04  
 L560365-01 (PH) - 9.3 @ 19.9c



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 Tax I.D. 62-0814289  
 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 14, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA1  
 Collected By : Brennan Graff  
 Collection Date : 02/09/12 11:49

ESC Sample # : L560365-01  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.017	0.0076	0.060	mg/kg	J	8270C-S	02/17/12	10
Acenaphthene	0.011	0.0071	0.060	mg/kg	J	8270C-S	02/17/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/17/12	10
Benzo(a)anthracene	0.021	0.0092	0.060	mg/kg	J	8270C-S	02/17/12	10
Benzo(a)pyrene	0.011	0.0062	0.060	mg/kg	J	8270C-S	02/17/12	10
Benzo(b)fluoranthene	0.016	0.0082	0.060	mg/kg	J	8270C-S	02/17/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/17/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg		8270C-S	02/17/12	10
Chrysene	0.031	0.011	0.060	mg/kg	J	8270C-S	02/17/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/17/12	10
Fluoranthene	0.011	0.010	0.060	mg/kg	J	8270C-S	02/17/12	10
Fluorene	0.046	0.0055	0.060	mg/kg	J	8270C-S	02/17/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/17/12	10
Naphthalene	0.32	0.0065	0.060	mg/kg		8270C-S	02/17/12	10
Phenanthrene	0.078	0.0074	0.060	mg/kg		8270C-S	02/17/12	10
Pyrene	0.020	0.0059	0.060	mg/kg	J	8270C-S	02/17/12	10
1-Methylnaphthalene	0.18	0.0079	0.060	mg/kg		8270C-S	02/17/12	10
2-Methylnaphthalene	0.67	0.0059	0.060	mg/kg		8270C-S	02/17/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/17/12	10
Surrogate Recovery								
Nitrobenzene-d5	63.1			% Rec.		8270C-S	02/17/12	10
2-Fluorobiphenyl	52.3			% Rec.		8270C-S	02/17/12	10
p-Terphenyl-d14	77.4			% Rec.		8270C-S	02/17/12	10

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 L560365-01 (PH) - 9.3 @ 19.9c



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REPORT OF ANALYSIS

February 20, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 14, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA2  
 Collected By : Brennan Graff  
 Collection Date : 02/09/12 11:55

ESC Sample # : L560365-02  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	02/17/12	1
Chromium,Trivalent	37.	0.17	2.0	mg/kg		Calc.	02/15/12	1
ORP	-30.			mV	T8	2580	02/15/12	1
pH	9.9			su	T8	9045D	02/15/12	1
Sodium Adsorption Ratio	2.8					Calc.	02/17/12	1
Specific Conductance	560			umhos/cm		9050AMo	02/17/12	1
Mercury	0.024	0.00080	0.020	mg/kg		7471	02/17/12	1
Arsenic	8.9	0.32	1.0	mg/kg	J3	6010B	02/15/12	1
Barium	330	0.050	0.25	mg/kg		6010B	02/15/12	1
Cadmium	0.37	0.040	0.25	mg/kg		6010B	02/15/12	1
Chromium	37.	0.085	0.50	mg/kg		6010B	02/15/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/15/12	1
Lead	12.	0.090	0.25	mg/kg		6010B	02/15/12	1
Nickel	23.	0.26	1.0	mg/kg		6010B	02/15/12	1
Selenium	1.6	0.32	1.0	mg/kg	P1	6010B	02/15/12	1
Silver	U	0.16	0.50	mg/kg		6010B	02/15/12	1
Zinc	54.	0.34	1.5	mg/kg		6010B	02/15/12	1
TPH (GC/FID) Low Fraction	13.	0.25	0.50	mg/kg		8015D/G	02/15/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.6			% Rec.		602/801	02/15/12	5
Benzene	U	0.0017	0.0050	mg/kg		8260B	02/15/12	5
Toluene	0.016	0.0016	0.025	mg/kg	J	8260B	02/15/12	5
Ethylbenzene	0.020	0.0019	0.0050	mg/kg		8260B	02/15/12	5
Total Xylenes	0.54	0.0023	0.015	mg/kg		8260B	02/15/12	5
Surrogate Recovery								
Toluene-d8	94.9			% Rec.		8260B	02/15/12	5
Dibromofluoromethane	94.0			% Rec.		8260B	02/15/12	5
a,a,a-Trifluorotoluene	95.3			% Rec.		8260B	02/15/12	5
4-Bromofluorobenzene	106.			% Rec.		8260B	02/15/12	5
TPH (GC/FID) High Fraction	45.	0.77	4.0	mg/kg		3546/DR	02/17/12	1
Surrogate recovery(%) o-Terphenyl	139.			% Rec.		3546/DR	02/17/12	1

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 L560365-02 (PH) - 9.9 @ 19.9c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 20, 2012

Date Received : February 14, 2012  
 Description : MCDA Sampling  
 Sample ID : MCDA2  
 Collected By : Brennan Graff  
 Collection Date : 02/09/12 11:55

ESC Sample # : L560365-02  
 Site ID : MCDA  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.022	0.00076	0.0060	mg/kg		8270C-S	02/17/12	1
Acenaphthene	0.0049	0.00071	0.0060	mg/kg	J	8270C-S	02/17/12	1
Acenaphthylene	U	0.00057	0.0060	mg/kg		8270C-S	02/17/12	1
Benzo(a)anthracene	U	0.00092	0.0060	mg/kg		8270C-S	02/17/12	1
Benzo(a)pyrene	U	0.00062	0.0060	mg/kg		8270C-S	02/17/12	1
Benzo(b)fluoranthene	U	0.00082	0.0060	mg/kg		8270C-S	02/17/12	1
Benzo(g,h,i)perylene	U	0.0012	0.0060	mg/kg		8270C-S	02/17/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	02/17/12	1
Chrysene	U	0.0011	0.0060	mg/kg		8270C-S	02/17/12	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	02/17/12	1
Fluoranthene	U	0.0010	0.0060	mg/kg		8270C-S	02/17/12	1
Fluorene	0.062	0.00055	0.0060	mg/kg		8270C-S	02/17/12	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	02/17/12	1
Naphthalene	0.14	0.00065	0.0060	mg/kg		8270C-S	02/17/12	1
Phenanthrene	0.075	0.00074	0.0060	mg/kg		8270C-S	02/17/12	1
Pyrene	0.00092	0.00059	0.0060	mg/kg	J	8270C-S	02/17/12	1
1-Methylnaphthalene	0.098	0.00079	0.0060	mg/kg		8270C-S	02/17/12	1
2-Methylnaphthalene	0.34	0.00059	0.0060	mg/kg	E	8270C-S	02/17/12	1
2-Chloronaphthalene	0.00065	0.00060	0.0060	mg/kg	J	8270C-S	02/17/12	1
Surrogate Recovery								
Nitrobenzene-d5	81.2			% Rec.		8270C-S	02/17/12	1
2-Fluorobiphenyl	72.5			% Rec.		8270C-S	02/17/12	1
p-Terphenyl-d14	78.7			% Rec.		8270C-S	02/17/12	1

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Reported: 02/20/12 16:04 Printed: 02/20/12 16:04  
 L560365-02 (PH) - 9.9 @ 19.9c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier	
L560365-01	WG578575	SAMP	o-Terphenyl	R2042312	J7	
	WG578537	SAMP	Chromium, Hexavalent	R2040473	J	
	WG578541	SAMP	pH	R2037412	T8	
	WG578578	SAMP	Anthracene	R2039032	J	
	WG578578	SAMP	Acenaphthene	R2039032	J	
	WG578578	SAMP	Benzo(a)anthracene	R2039032	J	
	WG578578	SAMP	Benzo(a)pyrene	R2039032	J	
	WG578578	SAMP	Benzo(b)fluoranthene	R2039032	J	
	WG578578	SAMP	Chrysene	R2039032	J	
	WG578578	SAMP	Fluoranthene	R2039032	J	
	WG578578	SAMP	Fluorene	R2039032	J	
	WG578578	SAMP	Pyrene	R2039032	J	
	WG578539	SAMP	ORP	R2038013	T8	
	L560365-02	WG578528	SAMP	Arsenic	R2038141	J3
		WG578528	SAMP	Selenium	R2038141	P1
		WG578663	SAMP	Toluene	R2037833	J
		WG578541	SAMP	pH	R2037412	T8
WG578578		SAMP	Acenaphthene	R2039032	J	
WG578578		SAMP	Pyrene	R2039032	J	
WG578578		SAMP	2-Methylnaphthalene	R2039032	E	
WG578578		SAMP	2-Chloronaphthalene	R2039032	J	
WG578539		SAMP	ORP	R2038013	T8	

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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  
02/20/12 at 16:04:51

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L560365-01 Account: OXYGJCO Received: 02/14/12 10:30 Due Date: 02/21/12 00:00 RPT Date: 02/20/12 16:04

Sample: L560365-02 Account: OXYGJCO Received: 02/14/12 10:30 Due Date: 02/21/12 00:00 RPT Date: 02/20/12 16:04



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Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Friday February 24, 2012

Report Number: L561390

Samples Received: 02/21/12

Client Project: WA-000546-0013-10

Description: Oxy Cuttings Sampling

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

February 24, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCNE-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 13:59

ESC Sample # : L561390-01

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.1	0.71	2.0	mg/kg	J	3060A/7	02/23/12	1
Chromium,Trivalent	12.	0.17	2.0	mg/kg		Calc.	02/22/12	1
ORP	120			mV		2580	02/23/12	1
pH	8.7			su	T8	9045D	02/22/12	1
Sodium Adsorption Ratio	23.				B	Calc.	02/23/12	1
Specific Conductance	1700			umhos/cm		9050AMo	02/21/12	1
Mercury	0.016	0.00080	0.020	mg/kg	J	7471	02/24/12	1
Arsenic	3.3	0.32	1.0	mg/kg		6010B	02/22/12	1
Barium	270	0.050	0.25	mg/kg		6010B	02/22/12	1
Cadmium	0.14	0.040	0.25	mg/kg	J	6010B	02/22/12	1
Chromium	13.	0.085	0.50	mg/kg		6010B	02/22/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/22/12	1
Lead	16.	0.090	0.25	mg/kg		6010B	02/22/12	1
Nickel	9.9	0.26	1.0	mg/kg		6010B	02/22/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/22/12	1
Silver	0.60	0.16	0.50	mg/kg		6010B	02/22/12	1
Zinc	37.	0.34	1.5	mg/kg		6010B	02/22/12	1
TPH (GC/FID) Low Fraction	10.	0.25	0.50	mg/kg		8015D/G	02/21/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	93.7			% Rec.		602/801	02/21/12	5
Benzene	0.024	0.0017	0.0050	mg/kg		8260B	02/21/12	5
Toluene	0.044	0.0016	0.025	mg/kg		8260B	02/21/12	5
Ethylbenzene	0.011	0.0019	0.0050	mg/kg		8260B	02/21/12	5
Total Xylenes	0.14	0.0023	0.015	mg/kg		8260B	02/21/12	5
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	02/21/12	5
Dibromofluoromethane	94.9			% Rec.		8260B	02/21/12	5
a,a,a-Trifluorotoluene	105.			% Rec.		8260B	02/21/12	5
4-Bromofluorobenzene	93.7			% Rec.		8260B	02/21/12	5
TPH (GC/FID) High Fraction	590	7.7	40.	mg/kg		3546/DR	02/24/12	10
Surrogate recovery(%) o-Terphenyl	3510			% Rec.	J1	3546/DR	02/24/12	10

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Reported: 02/24/12 14:54 Printed: 02/24/12 14:54  
 L561390-01 (DRO) - second extraction confirms high surrogate  
 L561390-01 (PH) - 8.7@20.3c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 24, 2012

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCNE-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 13:59

ESC Sample # : L561390-01

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.020	0.0076	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthene	0.029	0.0071	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(a)anthracene	0.015	0.0092	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(a)pyrene	0.016	0.0062	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(b)fluoranthene	0.023	0.0082	0.060	mg/kg	JJ4J3	8270C-S	02/23/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg	J3	8270C-S	02/23/12	10
Chrysene	0.055	0.011	0.060	mg/kg	JJ3	8270C-S	02/23/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/23/12	10
Fluoranthene	0.017	0.010	0.060	mg/kg	J	8270C-S	02/23/12	10
Fluorene	0.081	0.0055	0.060	mg/kg		8270C-S	02/23/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Naphthalene	0.41	0.0032	0.030	mg/kg		8270C-S	02/24/12	5
Phenanthrene	0.17	0.0074	0.060	mg/kg		8270C-S	02/23/12	10
Pyrene	0.038	0.0059	0.060	mg/kg	J	8270C-S	02/23/12	10
1-Methylnaphthalene	0.32	0.0039	0.030	mg/kg		8270C-S	02/24/12	5
2-Methylnaphthalene	0.85	0.0029	0.030	mg/kg		8270C-S	02/24/12	5
2-Chloronaphthalene	U	0.0030	0.030	mg/kg		8270C-S	02/24/12	5
Surrogate Recovery								
Nitrobenzene-d5	195.			% Rec.	J1	8270C-S	02/24/12	5
2-Fluorobiphenyl	69.7			% Rec.		8270C-S	02/23/12	10
p-Terphenyl-d14	118.			% Rec.		8270C-S	02/23/12	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
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Reported: 02/24/12 14:54 Printed: 02/24/12 14:54  
 L561390-01 (DRO) - second extraction confirms high surrogate  
 L561390-01 (PH) - 8.7@20.3c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 24, 2012

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

Date Received : February 21, 2012  
Description : Oxy Cuttings Sampling  
Sample ID : MCDA-MCN-21612  
Collected By : CJB  
Collection Date : 02/16/12 14:00

ESC Sample # : L561390-03

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.6	0.71	2.0	mg/kg	J	3060A/7	02/23/12	1
Chromium,Trivalent	16.	0.17	2.0	mg/kg		Calc.	02/22/12	1
ORP	51.			mV		2580	02/23/12	1
pH	8.9			su	T8	9045D	02/22/12	1
Sodium Adsorption Ratio	17.				B	Calc.	02/23/12	1
Specific Conductance	1300			umhos/cm		9050AMo	02/21/12	1
Mercury	0.019	0.00080	0.020	mg/kg	J	7471	02/24/12	1
Arsenic	4.1	0.32	1.0	mg/kg		6010B	02/22/12	1
Barium	280	0.050	0.25	mg/kg		6010B	02/22/12	1
Cadmium	0.16	0.040	0.25	mg/kg	J	6010B	02/22/12	1
Chromium	18.	0.085	0.50	mg/kg		6010B	02/22/12	1
Copper	17.	0.21	1.0	mg/kg		6010B	02/22/12	1
Lead	10.	0.090	0.25	mg/kg		6010B	02/22/12	1
Nickel	12.	0.26	1.0	mg/kg		6010B	02/22/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/22/12	1
Silver	0.83	0.16	0.50	mg/kg		6010B	02/22/12	1
Zinc	45.	0.34	1.5	mg/kg		6010B	02/22/12	1
TPH (GC/FID) Low Fraction	14.	0.25	0.50	mg/kg		8015D/G	02/21/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.1			% Rec.		602/801	02/21/12	5
Benzene	0.044	0.0017	0.0050	mg/kg		8260B	02/21/12	5
Toluene	0.091	0.0016	0.025	mg/kg		8260B	02/21/12	5
Ethylbenzene	0.030	0.0019	0.0050	mg/kg		8260B	02/21/12	5
Total Xylenes	0.62	0.0023	0.015	mg/kg		8260B	02/21/12	5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	02/21/12	5
Dibromofluoromethane	92.6			% Rec.		8260B	02/21/12	5
a,a,a-Trifluorotoluene	100.			% Rec.		8260B	02/21/12	5
4-Bromofluorobenzene	128.			% Rec.		8260B	02/21/12	5
TPH (GC/FID) High Fraction	580	7.7	40.	mg/kg		3546/DR	02/24/12	10
Surrogate recovery(%) o-Terphenyl	3470			% Rec.	J1	3546/DR	02/24/12	10

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Reported: 02/24/12 14:54 Printed: 02/24/12 14:55  
L561390-03 (PH) - 8.9@20.5c  
L561390-03 (DRO) - second extraction confirms high surrogate



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 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 24, 2012

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCN-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 14:00

ESC Sample # : L561390-03

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.019	0.0076	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthene	0.0074	0.0071	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(a)anthracene	0.026	0.0092	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(a)pyrene	0.024	0.0062	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(b)fluoranthene	0.027	0.0082	0.060	mg/kg	JJ4J3	8270C-S	02/23/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg	J3	8270C-S	02/23/12	10
Chrysene	0.053	0.011	0.060	mg/kg	JJ3	8270C-S	02/23/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/23/12	10
Fluoranthene	0.015	0.010	0.060	mg/kg	J	8270C-S	02/23/12	10
Fluorene	0.068	0.0055	0.060	mg/kg		8270C-S	02/23/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Naphthalene	0.42	0.0065	0.060	mg/kg		8270C-S	02/23/12	10
Phenanthrene	0.10	0.0074	0.060	mg/kg		8270C-S	02/23/12	10
Pyrene	0.037	0.0059	0.060	mg/kg	J	8270C-S	02/23/12	10
1-Methylnaphthalene	0.26	0.0079	0.060	mg/kg		8270C-S	02/23/12	10
2-Methylnaphthalene	0.74	0.0059	0.060	mg/kg		8270C-S	02/23/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/23/12	10
Surrogate Recovery								
Nitrobenzene-d5	188.			% Rec.	J1	8270C-S	02/23/12	10
2-Fluorobiphenyl	78.4			% Rec.		8270C-S	02/23/12	10
p-Terphenyl-d14	99.6			% Rec.		8270C-S	02/23/12	10

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 L561390-03 (PH) - 8.9@20.5c  
 L561390-03 (DRO) - second extraction confirms high surrogate



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REPORT OF ANALYSIS

February 24, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCS-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 13:50

ESC Sample # : L561390-04

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.4	0.71	2.0	mg/kg	J	3060A/7	02/23/12	1
Chromium,Trivalent	24.	0.17	2.0	mg/kg		Calc.	02/22/12	1
ORP	49.			mV		2580	02/23/12	1
pH	8.7			su	T8	9045D	02/22/12	1
Sodium Adsorption Ratio	13.				B	Calc.	02/23/12	1
Specific Conductance	1100			umhos/cm		9050AMo	02/21/12	1
Mercury	0.015	0.00080	0.020	mg/kg	J	7471	02/24/12	1
Arsenic	5.3	0.32	1.0	mg/kg		6010B	02/22/12	1
Barium	300	0.050	0.25	mg/kg		6010B	02/22/12	1
Cadmium	0.33	0.040	0.25	mg/kg		6010B	02/22/12	1
Chromium	26.	0.085	0.50	mg/kg		6010B	02/22/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/22/12	1
Lead	14.	0.090	0.25	mg/kg		6010B	02/22/12	1
Nickel	22.	0.26	1.0	mg/kg		6010B	02/22/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/22/12	1
Silver	1.1	0.16	0.50	mg/kg		6010B	02/22/12	1
Zinc	50.	0.34	1.5	mg/kg		6010B	02/22/12	1
TPH (GC/FID) Low Fraction	8.0	0.25	0.50	mg/kg		8015D/G	02/21/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	100.			% Rec.		602/801	02/21/12	5
Benzene	0.066	0.0017	0.0050	mg/kg		8260B	02/21/12	5
Toluene	0.065	0.0016	0.025	mg/kg		8260B	02/21/12	5
Ethylbenzene	0.011	0.0019	0.0050	mg/kg		8260B	02/21/12	5
Total Xylenes	0.12	0.0023	0.015	mg/kg		8260B	02/21/12	5
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/21/12	5
Dibromofluoromethane	93.3			% Rec.		8260B	02/21/12	5
a,a,a-Trifluorotoluene	107.			% Rec.		8260B	02/21/12	5
4-Bromofluorobenzene	113.			% Rec.		8260B	02/21/12	5
TPH (GC/FID) High Fraction	220	7.7	40.	mg/kg		3546/DR	02/24/12	10
Surrogate recovery(%) o-Terphenyl	1630			% Rec.	J1	3546/DR	02/24/12	10

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Reported: 02/24/12 14:54 Printed: 02/24/12 14:55  
 L561390-04 (DRO) - second extraction confirms high surrogate  
 L561390-04 (PH) - 8.7@20.7c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 24, 2012

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCS-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 13:50

ESC Sample # : L561390-04

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0080	0.0076	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthene	U	0.0071	0.060	mg/kg		8270C-S	02/23/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(a)anthracene	0.011	0.0092	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(a)pyrene	0.0070	0.0062	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(b)fluoranthene	U	0.0082	0.060	mg/kg	J4J3	8270C-S	02/23/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg	J3	8270C-S	02/23/12	10
Chrysene	0.014	0.011	0.060	mg/kg	JJ3	8270C-S	02/23/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/23/12	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	02/23/12	10
Fluorene	0.054	0.0055	0.060	mg/kg	J	8270C-S	02/23/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Naphthalene	0.35	0.0065	0.060	mg/kg		8270C-S	02/23/12	10
Phenanthrene	0.079	0.0074	0.060	mg/kg		8270C-S	02/23/12	10
Pyrene	0.016	0.0059	0.060	mg/kg	J	8270C-S	02/23/12	10
1-Methylnaphthalene	0.24	0.0079	0.060	mg/kg		8270C-S	02/23/12	10
2-Methylnaphthalene	0.60	0.0059	0.060	mg/kg		8270C-S	02/23/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/23/12	10
Surrogate Recovery								
Nitrobenzene-d5	145.			% Rec.	J1	8270C-S	02/23/12	10
2-Fluorobiphenyl	68.0			% Rec.		8270C-S	02/23/12	10
p-Terphenyl-d14	100.			% Rec.		8270C-S	02/23/12	10

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 L561390-04 (DRO) - second extraction confirms high surrogate  
 L561390-04 (PH) - 8.7@20.7c



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REPORT OF ANALYSIS

February 24, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCC-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 14:05

ESC Sample # : L561390-05

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.5	0.71	2.0	mg/kg	J	3060A/7	02/23/12	1
Chromium,Trivalent	20.	0.17	2.0	mg/kg		Calc.	02/22/12	1
ORP	47.			mV		2580	02/23/12	1
pH	8.7			su	T8	9045D	02/22/12	1
Sodium Adsorption Ratio	14.				B	Calc.	02/23/12	1
Specific Conductance	1200			umhos/cm		9050AMo	02/21/12	1
Mercury	0.016	0.00080	0.020	mg/kg	J	7471	02/24/12	1
Arsenic	4.3	0.32	1.0	mg/kg		6010B	02/22/12	1
Barium	250	0.050	0.25	mg/kg		6010B	02/22/12	1
Cadmium	0.083	0.040	0.25	mg/kg	J	6010B	02/22/12	1
Chromium	21.	0.085	0.50	mg/kg		6010B	02/22/12	1
Copper	17.	0.21	1.0	mg/kg		6010B	02/22/12	1
Lead	11.	0.090	0.25	mg/kg		6010B	02/22/12	1
Nickel	13.	0.26	1.0	mg/kg		6010B	02/22/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/22/12	1
Silver	0.77	0.16	0.50	mg/kg		6010B	02/22/12	1
Zinc	47.	0.34	1.5	mg/kg		6010B	02/22/12	1
TPH (GC/FID) Low Fraction	10.	0.25	0.50	mg/kg		8015D/G	02/21/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	95.2			% Rec.		602/801	02/21/12	5
Benzene	0.054	0.0017	0.0050	mg/kg		8260B	02/21/12	5
Toluene	0.17	0.0016	0.025	mg/kg		8260B	02/21/12	5
Ethylbenzene	0.054	0.0019	0.0050	mg/kg		8260B	02/21/12	5
Total Xylenes	1.0	0.0023	0.015	mg/kg		8260B	02/21/12	5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	02/21/12	5
Dibromofluoromethane	91.6			% Rec.		8260B	02/21/12	5
a,a,a-Trifluorotoluene	106.			% Rec.		8260B	02/21/12	5
4-Bromofluorobenzene	141.			% Rec.	J1	8260B	02/21/12	5
TPH (GC/FID) High Fraction	210	7.7	40.	mg/kg		3546/DR	02/24/12	10
Surrogate recovery(%) o-Terphenyl	1430			% Rec.	J1	3546/DR	02/24/12	10

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 L561390-05 (DRO) - second extraction confirms high surrogate  
 L561390-05 (PH) - 8.7@20.3c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 24, 2012

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCC-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 14:05

ESC Sample # : L561390-05

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.013	0.0076	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthene	0.019	0.0071	0.060	mg/kg	J	8270C-S	02/23/12	10
Acenaphthylene	U	0.0057	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(a)anthracene	U	0.0092	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(a)pyrene	0.010	0.0062	0.060	mg/kg	J	8270C-S	02/23/12	10
Benzo(b)fluoranthene	0.012	0.0082	0.060	mg/kg	JJ4J3	8270C-S	02/23/12	10
Benzo(g,h,i)perylene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Benzo(k)fluoranthene	U	0.013	0.060	mg/kg	J3	8270C-S	02/23/12	10
Chrysene	0.041	0.011	0.060	mg/kg	JJ3	8270C-S	02/23/12	10
Dibenz(a,h)anthracene	U	0.011	0.060	mg/kg		8270C-S	02/23/12	10
Fluoranthene	U	0.010	0.060	mg/kg		8270C-S	02/23/12	10
Fluorene	0.054	0.0055	0.060	mg/kg	J	8270C-S	02/23/12	10
Indeno(1,2,3-cd)pyrene	U	0.012	0.060	mg/kg		8270C-S	02/23/12	10
Naphthalene	0.36	0.0065	0.060	mg/kg		8270C-S	02/23/12	10
Phenanthrene	0.099	0.0074	0.060	mg/kg		8270C-S	02/23/12	10
Pyrene	0.027	0.0059	0.060	mg/kg	J	8270C-S	02/23/12	10
1-Methylnaphthalene	0.21	0.0079	0.060	mg/kg		8270C-S	02/23/12	10
2-Methylnaphthalene	0.66	0.0059	0.060	mg/kg		8270C-S	02/23/12	10
2-Chloronaphthalene	U	0.0060	0.060	mg/kg		8270C-S	02/23/12	10
Surrogate Recovery								
Nitrobenzene-d5	164.			% Rec.	J1	8270C-S	02/23/12	10
2-Fluorobiphenyl	85.7			% Rec.		8270C-S	02/23/12	10
p-Terphenyl-d14	110.			% Rec.		8270C-S	02/23/12	10

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD  
 RDL = Reported Detection Limit = LOQ = PQL = EQL  
 Note:

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Reported: 02/24/12 14:54 Printed: 02/24/12 14:55  
 L561390-05 (DRO) - second extraction confirms high surrogate  
 L561390-05 (PH) - 8.7@20.3c



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 24, 2012

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCW-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 14:10

ESC Sample # : L561390-06

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.7	0.71	2.0	mg/kg	J	3060A/7	02/23/12	1
Chromium,Trivalent	25.	0.17	2.0	mg/kg		Calc.	02/22/12	1
ORP	47.			mV		2580	02/23/12	1
pH	8.8			su	T8	9045D	02/22/12	1
Sodium Adsorption Ratio	11.				B	Calc.	02/23/12	1
Specific Conductance	1100			umhos/cm		9050AMo	02/21/12	1
Mercury	0.014	0.00080	0.020	mg/kg	J	7471	02/24/12	1
Arsenic	4.9	0.32	1.0	mg/kg	P1	6010B	02/22/12	1
Barium	460	0.050	0.25	mg/kg	J3V	6010B	02/22/12	1
Cadmium	0.19	0.040	0.25	mg/kg	JP1	6010B	02/22/12	1
Chromium	26.	0.085	0.50	mg/kg		6010B	02/22/12	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/22/12	1
Lead	12.	0.090	0.25	mg/kg		6010B	02/22/12	1
Nickel	14.	0.26	1.0	mg/kg		6010B	02/22/12	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/22/12	1
Silver	0.91	0.16	0.50	mg/kg		6010B	02/22/12	1
Zinc	46.	0.34	1.5	mg/kg		6010B	02/22/12	1
TPH (GC/FID) Low Fraction	9.5	0.25	0.50	mg/kg		8015D/G	02/21/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.4			% Rec.		602/801	02/21/12	5
Benzene	0.061	0.0017	0.0050	mg/kg		8260B	02/21/12	5
Toluene	0.065	0.0016	0.025	mg/kg		8260B	02/21/12	5
Ethylbenzene	0.015	0.0019	0.0050	mg/kg		8260B	02/21/12	5
Total Xylenes	0.19	0.0023	0.015	mg/kg		8260B	02/21/12	5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	02/21/12	5
Dibromofluoromethane	95.7			% Rec.		8260B	02/21/12	5
a,a,a-Trifluorotoluene	109.			% Rec.		8260B	02/21/12	5
4-Bromofluorobenzene	154.			% Rec.	J1	8260B	02/21/12	5
TPH (GC/FID) High Fraction	180	7.7	40.	mg/kg		3546/DR	02/24/12	10
Surrogate recovery(%) o-Terphenyl	1060			% Rec.	J1	3546/DR	02/24/12	10

U = ND (Not Detected)  
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Reported: 02/24/12 14:54 Printed: 02/24/12 14:55  
 L561390-06 (DRO) - second extraction confirms high surrogate  
 L561390-06 (PH) - 8.8@20.5c



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 Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

February 24, 2012

Date Received : February 21, 2012  
 Description : Oxy Cuttings Sampling  
 Sample ID : MCDA-MCW-21612  
 Collected By : CJB  
 Collection Date : 02/16/12 14:10

ESC Sample # : L561390-06

Site ID :

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0029	0.00076	0.0060	mg/kg	J	8270C-S	02/23/12	1
Acenaphthene	0.0023	0.00071	0.0060	mg/kg	J	8270C-S	02/23/12	1
Acenaphthylene	0.0022	0.00057	0.0060	mg/kg	J	8270C-S	02/23/12	1
Benzo(a)anthracene	0.0052	0.00092	0.0060	mg/kg	J	8270C-S	02/23/12	1
Benzo(a)pyrene	0.0041	0.00062	0.0060	mg/kg	J	8270C-S	02/23/12	1
Benzo(b)fluoranthene	0.0036	0.00082	0.0060	mg/kg	JJ4	8270C-S	02/23/12	1
Benzo(g,h,i)perylene	0.0012	0.0012	0.0060	mg/kg	J	8270C-S	02/23/12	1
Benzo(k)fluoranthene	U	0.0013	0.0060	mg/kg		8270C-S	02/23/12	1
Chrysene	0.0087	0.0011	0.0060	mg/kg		8270C-S	02/23/12	1
Dibenz(a,h)anthracene	U	0.0011	0.0060	mg/kg		8270C-S	02/23/12	1
Fluoranthene	0.0033	0.0010	0.0060	mg/kg	J	8270C-S	02/23/12	1
Fluorene	0.028	0.00055	0.0060	mg/kg	J5	8270C-S	02/23/12	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0060	mg/kg		8270C-S	02/23/12	1
Naphthalene	0.19	0.00065	0.0060	mg/kg	V	8270C-S	02/23/12	1
Phenanthrene	0.029	0.00074	0.0060	mg/kg	J5	8270C-S	02/23/12	1
Pyrene	0.0078	0.00059	0.0060	mg/kg		8270C-S	02/23/12	1
1-Methylnaphthalene	0.12	0.00079	0.0060	mg/kg	V	8270C-S	02/23/12	1
2-Methylnaphthalene	0.35	0.00059	0.0060	mg/kg	VE	8270C-S	02/23/12	1
2-Chloronaphthalene	U	0.00060	0.0060	mg/kg		8270C-S	02/23/12	1
Surrogate Recovery								
Nitrobenzene-d5	59.5			% Rec.		8270C-S	02/23/12	1
2-Fluorobiphenyl	58.7			% Rec.		8270C-S	02/23/12	1
p-Terphenyl-d14	87.0			% Rec.		8270C-S	02/23/12	1

U = ND (Not Detected)  
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Reported: 02/24/12 14:54 Printed: 02/24/12 14:55  
 L561390-06 (DRO) - second extraction confirms high surrogate  
 L561390-06 (PH) - 8.8@20.5c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier	
L561390-01	WG579590	SAMP	Sodium Adsorption Ratio	R2046812	B	
	WG579504	SAMP	Cadmium	R2045035	J	
	WG579794	SAMP	o-Terphenyl	R2047855	J1	
	WG579162	SAMP	Chromium, Hexavalent	R2046412	J	
	WG579816	SAMP	Mercury	R2048372	J	
	WG579425	SAMP	pH	R2045653	T8	
	WG579551	SAMP	Anthracene	R2047893	J	
	WG579551	SAMP	Acenaphthene	R2047893	J	
	WG579551	SAMP	Benzo(a)anthracene	R2047893	J	
	WG579551	SAMP	Benzo(a)pyrene	R2047893	J	
	WG579551	SAMP	Benzo(b)fluoranthene	R2047893	JJ4J3	
	WG579551	SAMP	Benzo(k)fluoranthene	R2047893	J3	
	WG579551	SAMP	Chrysene	R2047893	JJ3	
	WG579551	SAMP	Fluoranthene	R2047893	J	
	WG579551	SAMP	Pyrene	R2047893	J	
	WG579551	SAMP	Nitrobenzene-d5	R2047893	J1	
	L561390-03	WG579590	SAMP	Sodium Adsorption Ratio	R2046812	B
		WG579504	SAMP	Cadmium	R2045035	J
WG579794		SAMP	o-Terphenyl	R2047855	J1	
WG579162		SAMP	Chromium, Hexavalent	R2046412	J	
WG579816		SAMP	Mercury	R2048372	J	
WG579425		SAMP	pH	R2045653	T8	
WG579551		SAMP	Anthracene	R2047893	J	
WG579551		SAMP	Acenaphthene	R2047893	J	
WG579551		SAMP	Benzo(a)anthracene	R2047893	J	
WG579551		SAMP	Benzo(a)pyrene	R2047893	J	
WG579551		SAMP	Benzo(b)fluoranthene	R2047893	JJ4J3	
WG579551		SAMP	Benzo(k)fluoranthene	R2047893	J3	
WG579551		SAMP	Chrysene	R2047893	JJ3	
WG579551		SAMP	Fluoranthene	R2047893	J	
WG579551		SAMP	Pyrene	R2047893	J	
WG579551		SAMP	Nitrobenzene-d5	R2047893	J1	
L561390-04		WG579590	SAMP	Sodium Adsorption Ratio	R2046812	B
		WG579794	SAMP	o-Terphenyl	R2047855	J1
	WG579162	SAMP	Chromium, Hexavalent	R2046412	J	
	WG579816	SAMP	Mercury	R2048372	J	
	WG579425	SAMP	pH	R2045653	T8	
	WG579551	SAMP	Anthracene	R2047893	J	
	WG579551	SAMP	Benzo(a)anthracene	R2047893	J	
	WG579551	SAMP	Benzo(a)pyrene	R2047893	J	
	WG579551	SAMP	Benzo(b)fluoranthene	R2047893	J4J3	
	WG579551	SAMP	Benzo(k)fluoranthene	R2047893	J3	
	WG579551	SAMP	Chrysene	R2047893	JJ3	
	WG579551	SAMP	Fluorene	R2047893	J	
	WG579551	SAMP	Pyrene	R2047893	J	
	WG579551	SAMP	Nitrobenzene-d5	R2047893	J1	
	L561390-05	WG579590	SAMP	Sodium Adsorption Ratio	R2046812	B
		WG579504	SAMP	Cadmium	R2045035	J
		WG579794	SAMP	o-Terphenyl	R2047855	J1
		WG579162	SAMP	Chromium, Hexavalent	R2046412	J
WG579816		SAMP	Mercury	R2048372	J	
WG579489		SAMP	4-Bromofluorobenzene	R2044972	J1	
WG579425		SAMP	pH	R2045653	T8	
WG579551		SAMP	Anthracene	R2047893	J	
WG579551		SAMP	Acenaphthene	R2047893	J	
WG579551		SAMP	Benzo(a)pyrene	R2047893	J	
WG579551		SAMP	Benzo(b)fluoranthene	R2047893	JJ4J3	
WG579551		SAMP	Benzo(k)fluoranthene	R2047893	J3	
WG579551		SAMP	Chrysene	R2047893	JJ3	
WG579551		SAMP	Fluorene	R2047893	J	
WG579551		SAMP	Pyrene	R2047893	J	
WG579551		SAMP	Nitrobenzene-d5	R2047893	J1	
L561390-06		WG579590	SAMP	Sodium Adsorption Ratio	R2046812	B
		WG579504	SAMP	Arsenic	R2045035	P1
	WG579504	SAMP	Barium	R2045035	J3V	
	WG579504	SAMP	Cadmium	R2045035	JP1	
	WG579794	SAMP	o-Terphenyl	R2047855	J1	
	WG579162	SAMP	Chromium, Hexavalent	R2046412	J	
	WG579816	SAMP	Mercury	R2048372	J	

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
	WG579489	SAMP	4-Bromofluorobenzene	R2044972	J1
	WG579425	SAMP	pH	R2045653	T8
	WG579551	SAMP	Anthracene	R2047893	J
	WG579551	SAMP	Acenaphthene	R2047893	J
	WG579551	SAMP	Acenaphthylene	R2047893	J
	WG579551	SAMP	Benzo(a)anthracene	R2047893	J
	WG579551	SAMP	Benzo(a)pyrene	R2047893	J
	WG579551	SAMP	Benzo(b)fluoranthene	R2047893	JJ4
	WG579551	SAMP	Benzo(g,h,i)perylene	R2047893	J
	WG579551	SAMP	Fluoranthene	R2047893	J
	WG579551	SAMP	Fluorene	R2047893	J5
	WG579551	SAMP	Naphthalene	R2047893	V
	WG579551	SAMP	Phenanthrene	R2047893	J5
	WG579551	SAMP	1-Methylnaphthalene	R2047893	V
	WG579551	SAMP	2-Methylnaphthalene	R2047893	VE

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.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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  
02/24/12 at 14:55:08

TSR Signing Reports: 134  
R4 - Rush: Three Day

Sample: L561390-01 Account: OXYGJCO Received: 02/21/12 09:00 Due Date: 02/24/12 00:00 RPT Date: 02/24/12 14:54  
Sample: L561390-03 Account: OXYGJCO Received: 02/21/12 09:00 Due Date: 02/24/12 00:00 RPT Date: 02/24/12 14:54  
Sample: L561390-04 Account: OXYGJCO Received: 02/21/12 09:00 Due Date: 02/24/12 00:00 RPT Date: 02/24/12 14:54  
Sample: L561390-05 Account: OXYGJCO Received: 02/21/12 09:00 Due Date: 02/24/12 00:00 RPT Date: 02/24/12 14:54  
Sample: L561390-06 Account: OXYGJCO Received: 02/21/12 09:00 Due Date: 02/24/12 00:00 RPT Date: 02/24/12 14:54



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Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Tuesday July 31, 2012

Report Number: L586821

Samples Received: 07/26/12

Client Project: WA-000546-0013-10

Description: MCDA

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. 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

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-S-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:32

ESC Sample # : L586821-01

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	07/30/12	1
Chromium,Trivalent	14.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	71.			mV		2580	07/28/12	1
pH	8.1			su		9045D	07/28/12	1
Sodium Adsorption Ratio	16.					Calc.	07/28/12	1
Specific Conductance	2900			umhos/cm		9050AMo	07/30/12	1
Mercury	0.017	0.00080	0.020	mg/kg	J	7471	07/28/12	1
Arsenic	8.7	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	270	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	14.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	16.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	14.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	10.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	0.87	0.32	1.0	mg/kg	J	6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	36.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	0.37	0.25	0.50	mg/kg	J	8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.7			% Rec.		602/801	07/26/12	5
Benzene	0.0020	0.0017	0.0050	mg/kg	J	8260B	07/26/12	5
Toluene	0.0054	0.0016	0.025	mg/kg	J	8260B	07/26/12	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	07/26/12	5
Total Xylenes	0.0040	0.0023	0.015	mg/kg	J	8260B	07/26/12	5
Surrogate Recovery								
Toluene-d8	94.4			% Rec.		8260B	07/26/12	5
Dibromofluoromethane	105.			% Rec.		8260B	07/26/12	5
a,a,a-Trifluorotoluene	99.7			% Rec.		8260B	07/26/12	5
4-Bromofluorobenzene	96.2			% Rec.		8260B	07/26/12	5
TPH (GC/FID) High Fraction	460	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	303.			% Rec.	J7	3546/DR	07/27/12	20

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

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L586821-01 (PH) - 8.1@19.7c



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-S-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:32

ESC Sample # : L586821-01  
 Site ID : MCPA  
 Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.016	0.015	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthene	0.030	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	0.015	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)anthracene	0.029	0.018	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)pyrene	0.018	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(b)fluoranthene	0.020	0.016	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	0.035	0.022	0.12	mg/kg	J	8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	07/28/12	20
Fluorene	0.054	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.36	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.15	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Pyrene	0.065	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.36	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	0.66	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	0.025	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	52.9			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	109.			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	143.			% Rec.	J7	8270C-S	07/28/12	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD = TRRP SDL  
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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-N-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:01

ESC Sample # : L586821-04

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	07/30/12	1
Chromium,Trivalent	32.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	66.			mV		2580	07/28/12	1
pH	8.1			su		9045D	07/28/12	1
Sodium Adsorption Ratio	5.5					Calc.	07/28/12	1
Specific Conductance	730			umhos/cm		9050AMo	07/30/12	1
Mercury	0.022	0.00080	0.020	mg/kg		7471	07/28/12	1
Arsenic	11.	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	420	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	32.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	24.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	27.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	18.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	1.9	0.32	1.0	mg/kg		6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	56.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	0.56	0.25	0.50	mg/kg		8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	102.			% Rec.		602/801	07/26/12	5
Benzene	U	0.0017	0.0050	mg/kg		8260B	07/27/12	5
Toluene	U	0.0016	0.025	mg/kg		8260B	07/27/12	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	07/27/12	5
Total Xylenes	U	0.0023	0.015	mg/kg		8260B	07/27/12	5
Surrogate Recovery								
Toluene-d8	95.4			% Rec.		8260B	07/27/12	5
Dibromofluoromethane	103.			% Rec.		8260B	07/27/12	5
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	07/27/12	5
4-Bromofluorobenzene	103.			% Rec.		8260B	07/27/12	5
TPH (GC/FID) High Fraction	170	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	106.			% Rec.	J7	3546/DR	07/27/12	20

U = ND (Not Detected)

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-N-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:01

ESC Sample # : L586821-04

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Acenaphthene	0.019	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(a)anthracene	U	0.018	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(a)pyrene	U	0.012	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(b)fluoranthene	U	0.016	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	07/28/12	20
Fluorene	0.074	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.24	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.11	0.015	0.12	mg/kg	J	8270C-S	07/28/12	20
Pyrene	0.031	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.17	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	0.48	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	26.7			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	99.2			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	97.1			% Rec.	J7	8270C-S	07/28/12	20

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-NW-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:11

ESC Sample # : L586821-05

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	0.76	0.64	2.0	mg/kg	J	3060A/7	07/30/12	1
Chromium,Trivalent	27.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	71.			mV		2580	07/28/12	1
pH	8.1			su		9045D	07/28/12	1
Sodium Adsorption Ratio	6.7					Calc.	07/28/12	1
Specific Conductance	1100			umhos/cm		9050AMo	07/30/12	1
Mercury	0.023	0.00080	0.020	mg/kg		7471	07/28/12	1
Arsenic	9.4	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	420	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	27.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	24.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	28.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	16.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	1.6	0.32	1.0	mg/kg		6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	55.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	0.75	0.25	0.50	mg/kg		8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	105.			% Rec.		602/801	07/26/12	5
Benzene	0.0022	0.0017	0.0050	mg/kg	J	8260B	07/27/12	5
Toluene	0.0037	0.0016	0.025	mg/kg	J	8260B	07/27/12	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	07/27/12	5
Total Xylenes	0.0032	0.0023	0.015	mg/kg	J	8260B	07/27/12	5
Surrogate Recovery								
Toluene-d8	95.6			% Rec.		8260B	07/27/12	5
Dibromofluoromethane	102.			% Rec.		8260B	07/27/12	5
a,a,a-Trifluorotoluene	99.2			% Rec.		8260B	07/27/12	5
4-Bromofluorobenzene	100.			% Rec.		8260B	07/27/12	5
TPH (GC/FID) High Fraction	310	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	459.			% Rec.	J7	3546/DR	07/27/12	20

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-NW-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:11

ESC Sample # : L586821-05

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Acenaphthene	0.031	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(a)anthracene	0.031	0.018	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)pyrene	0.015	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(b)fluoranthene	U	0.016	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	0.034	0.022	0.12	mg/kg	J	8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	07/28/12	20
Fluorene	0.12	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.48	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.16	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Pyrene	0.042	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.37	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	0.86	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	83.9			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	112.			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	112.			% Rec.	J7	8270C-S	07/28/12	20

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD = TRRP SDL  
 RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL  
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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-SW-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:23

ESC Sample # : L586821-06

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	07/30/12	1
Chromium,Trivalent	19.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	98.			mV		2580	07/28/12	1
pH	8.2			su		9045D	07/28/12	1
Sodium Adsorption Ratio	16.					Calc.	07/28/12	1
Specific Conductance	2100			umhos/cm		9050AMo	07/30/12	1
Mercury	0.020	0.00080	0.020	mg/kg		7471	07/28/12	1
Arsenic	11.	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	420	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	19.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	20.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	19.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	12.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	1.5	0.32	1.0	mg/kg		6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	49.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	0.96	0.25	0.50	mg/kg		8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.3			% Rec.		602/801	07/26/12	5
Benzene	0.0063	0.0017	0.0050	mg/kg		8260B	07/27/12	5
Toluene	0.011	0.0016	0.025	mg/kg	J	8260B	07/27/12	5
Ethylbenzene	0.0020	0.0019	0.0050	mg/kg	J	8260B	07/27/12	5
Total Xylenes	0.0084	0.0023	0.015	mg/kg	J	8260B	07/27/12	5
Surrogate Recovery				% Rec.				
Toluene-d8	95.0			% Rec.		8260B	07/27/12	5
Dibromofluoromethane	103.			% Rec.		8260B	07/27/12	5
a,a,a-Trifluorotoluene	99.9			% Rec.		8260B	07/27/12	5
4-Bromofluorobenzene	93.4			% Rec.		8260B	07/27/12	5
TPH (GC/FID) High Fraction	350	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	423.			% Rec.	J7	3546/DR	07/27/12	20

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L586821-06 (PH) - 8.2@19.1c



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

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-SW-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:23

ESC Sample # : L586821-06

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Acenaphthene	0.019	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	U	0.011	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(a)anthracene	U	0.018	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(a)pyrene	0.020	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(b)fluoranthene	0.020	0.016	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	0.061	0.022	0.12	mg/kg	J	8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	U	0.021	0.12	mg/kg		8270C-S	07/28/12	20
Fluorene	0.049	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.32	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.14	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Pyrene	0.060	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.26	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	0.58	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	0.022	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	23.4			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	110.			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	150.			% Rec.	J7	8270C-S	07/28/12	20

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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-SC-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:38

ESC Sample # : L586821-07  
 Site ID : MCPA  
 Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	07/30/12	1
Chromium,Trivalent	24.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	100			mV		2580	07/28/12	1
pH	8.2			su		9045D	07/28/12	1
Sodium Adsorption Ratio	12.					Calc.	07/28/12	1
Specific Conductance	1400			umhos/cm		9050AMo	07/30/12	1
Mercury	0.021	0.00080	0.020	mg/kg		7471	07/28/12	1
Arsenic	12.	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	450	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	24.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	25.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	23.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	17.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	2.1	0.32	1.0	mg/kg		6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	56.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	0.49	0.25	0.50	mg/kg	J	8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	100.			% Rec.		602/801	07/26/12	5
Benzene	0.0055	0.0017	0.0050	mg/kg		8260B	07/27/12	5
Toluene	0.0064	0.0016	0.025	mg/kg	J	8260B	07/27/12	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	07/27/12	5
Total Xylenes	0.0036	0.0023	0.015	mg/kg	J	8260B	07/27/12	5
Surrogate Recovery								
Toluene-d8	94.5			% Rec.		8260B	07/27/12	5
Dibromofluoromethane	104.			% Rec.		8260B	07/27/12	5
a,a,a-Trifluorotoluene	100.			% Rec.		8260B	07/27/12	5
4-Bromofluorobenzene	95.3			% Rec.		8260B	07/27/12	5
TPH (GC/FID) High Fraction	390	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	438.			% Rec.	J7	3546/DR	07/27/12	20

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REPORT OF ANALYSIS

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

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-SC-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:38

ESC Sample # : L586821-07

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.018	0.015	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthene	0.037	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	0.017	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)anthracene	0.032	0.018	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)pyrene	0.035	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(b)fluoranthene	0.028	0.016	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(g,h,i)perylene	0.029	0.025	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	0.10	0.022	0.12	mg/kg	J	8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	0.038	0.021	0.12	mg/kg	J	8270C-S	07/28/12	20
Fluorene	0.15	0.011	0.12	mg/kg		8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.74	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.28	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Pyrene	0.091	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.66	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	1.2	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	32.7			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	117.			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	167.			% Rec.	J7	8270C-S	07/28/12	20

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 Grand Junction, CO 81506

July 31, 2012

Date Received : July 26, 2012  
 Description : MCDA  
 Sample ID : MCDA-WC-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:17

ESC Sample # : L586821-08

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	07/30/12	1
Chromium,Trivalent	20.	0.17	2.0	mg/kg		Calc.	07/28/12	1
ORP	100			mV		2580	07/28/12	1
pH	8.2			su		9045D	07/28/12	1
Sodium Adsorption Ratio	15.					Calc.	07/28/12	1
Specific Conductance	2400			umhos/cm		9050AMo	07/30/12	1
Mercury	0.020	0.00080	0.020	mg/kg		7471	07/28/12	1
Arsenic	11.	0.32	1.0	mg/kg		6010B	07/28/12	1
Barium	440	0.050	0.25	mg/kg		6010B	07/28/12	1
Cadmium	U	0.040	0.25	mg/kg		6010B	07/28/12	1
Chromium	20.	0.085	0.50	mg/kg		6010B	07/28/12	1
Copper	22.	0.21	1.0	mg/kg		6010B	07/28/12	1
Lead	19.	0.090	0.25	mg/kg		6010B	07/28/12	1
Nickel	13.	0.26	1.0	mg/kg		6010B	07/28/12	1
Selenium	1.5	0.32	1.0	mg/kg		6010B	07/28/12	1
Silver	U	0.16	0.50	mg/kg		6010B	07/28/12	1
Zinc	50.	0.34	1.5	mg/kg		6010B	07/28/12	1
TPH (GC/FID) Low Fraction	U	0.25	0.50	mg/kg		8015D/G	07/26/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	101.			% Rec.		602/801	07/26/12	5
Benzene	0.0028	0.0017	0.0050	mg/kg	J	8260B	07/27/12	5
Toluene	0.0070	0.0016	0.025	mg/kg	J	8260B	07/27/12	5
Ethylbenzene	U	0.0019	0.0050	mg/kg		8260B	07/27/12	5
Total Xylenes	0.0034	0.0023	0.015	mg/kg	J	8260B	07/27/12	5
Surrogate Recovery								
Toluene-d8	93.9			% Rec.		8260B	07/27/12	5
Dibromofluoromethane	97.9			% Rec.		8260B	07/27/12	5
a,a,a-Trifluorotoluene	104.			% Rec.		8260B	07/27/12	5
4-Bromofluorobenzene	96.6			% Rec.		8260B	07/27/12	5
TPH (GC/FID) High Fraction	300	15.	80.	mg/kg		3546/DR	07/27/12	20
Surrogate recovery(%) o-Terphenyl	532.			% Rec.	J7	3546/DR	07/27/12	20

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July 31, 2012

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 Description : MCDA  
 Sample ID : MCDA-WC-072512  
 Collected By : CJB  
 Collection Date : 07/25/12 11:17

ESC Sample # : L586821-08

Site ID : MCPA

Project # : WA-000546-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.015	0.015	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthene	0.021	0.014	0.12	mg/kg	J	8270C-S	07/28/12	20
Acenaphthylene	0.012	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)anthracene	0.036	0.018	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(a)pyrene	0.025	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(b)fluoranthene	0.023	0.016	0.12	mg/kg	J	8270C-S	07/28/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	07/28/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	07/28/12	20
Chrysene	0.055	0.022	0.12	mg/kg	J	8270C-S	07/28/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	07/28/12	20
Fluoranthene	0.025	0.021	0.12	mg/kg	J	8270C-S	07/28/12	20
Fluorene	0.061	0.011	0.12	mg/kg	J	8270C-S	07/28/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	07/28/12	20
Naphthalene	0.39	0.013	0.12	mg/kg		8270C-S	07/28/12	20
Phenanthrene	0.18	0.015	0.12	mg/kg		8270C-S	07/28/12	20
Pyrene	0.073	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
1-Methylnaphthalene	0.30	0.016	0.12	mg/kg		8270C-S	07/28/12	20
2-Methylnaphthalene	0.74	0.012	0.12	mg/kg		8270C-S	07/28/12	20
2-Chloronaphthalene	0.022	0.012	0.12	mg/kg	J	8270C-S	07/28/12	20
Surrogate Recovery								
Nitrobenzene-d5	26.0			% Rec.	J7	8270C-S	07/28/12	20
2-Fluorobiphenyl	104.			% Rec.	J7	8270C-S	07/28/12	20
p-Terphenyl-d14	152.			% Rec.	J7	8270C-S	07/28/12	20

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier	
L586821-01	WG604695	SAMP	Selenium	R2276773	J	
	WG604652	SAMP	o-Terphenyl	R2276393	J7	
	WG604770	SAMP	Mercury	R2276953	J	
	WG604650	SAMP	TPH (GC/FID) Low Fraction	R2274794	J	
	WG604649	SAMP	Benzene	R2275095	J	
	WG604649	SAMP	Toluene	R2275095	J	
	WG604649	SAMP	Total Xylenes	R2275095	J	
	WG604645	SAMP	Anthracene	R2276473	J	
	WG604645	SAMP	Acenaphthene	R2276473	J	
	WG604645	SAMP	Acenaphthylene	R2276473	J	
	WG604645	SAMP	Benzo(a)anthracene	R2276473	J	
	WG604645	SAMP	Benzo(a)pyrene	R2276473	J	
	WG604645	SAMP	Benzo(b)fluoranthene	R2276473	J	
	WG604645	SAMP	Chrysene	R2276473	J	
	WG604645	SAMP	Fluorene	R2276473	J	
	WG604645	SAMP	Pyrene	R2276473	J	
	WG604645	SAMP	2-Chloronaphthalene	R2276473	J	
	WG604645	SAMP	Nitrobenzene-d5	R2276473	J7	
	WG604645	SAMP	2-Fluorobiphenyl	R2276473	J7	
	WG604645	SAMP	p-Terphenyl-d14	R2276473	J7	
	L586821-04	WG604652	SAMP	o-Terphenyl	R2276393	J7
WG604645		SAMP	Acenaphthene	R2276473	J	
WG604645		SAMP	Fluorene	R2276473	J	
WG604645		SAMP	Phenanthrene	R2276473	J	
WG604645		SAMP	Pyrene	R2276473	J	
WG604645		SAMP	Nitrobenzene-d5	R2276473	J7	
WG604645		SAMP	2-Fluorobiphenyl	R2276473	J7	
WG604645		SAMP	p-Terphenyl-d14	R2276473	J7	
L586821-05		WG604652	SAMP	o-Terphenyl	R2276393	J7
		WG604782	SAMP	Chromium, Hexavalent	R2279493	J
	WG604649	SAMP	Benzene	R2275095	J	
	WG604649	SAMP	Toluene	R2275095	J	
	WG604649	SAMP	Total Xylenes	R2275095	J	
	WG604645	SAMP	Acenaphthene	R2276473	J	
	WG604645	SAMP	Benzo(a)anthracene	R2276473	J	
	WG604645	SAMP	Benzo(a)pyrene	R2276473	J	
	WG604645	SAMP	Chrysene	R2276473	J	
	WG604645	SAMP	Fluorene	R2276473	J	
	WG604645	SAMP	Pyrene	R2276473	J	
	WG604645	SAMP	Nitrobenzene-d5	R2276473	J7	
	WG604645	SAMP	2-Fluorobiphenyl	R2276473	J7	
	WG604645	SAMP	p-Terphenyl-d14	R2276473	J7	
L586821-06	WG604652	SAMP	o-Terphenyl	R2276393	J7	
	WG604649	SAMP	Toluene	R2275095	J	
	WG604649	SAMP	Ethylbenzene	R2275095	J	
	WG604649	SAMP	Total Xylenes	R2275095	J	
	WG604645	SAMP	Acenaphthene	R2276473	J	
	WG604645	SAMP	Benzo(a)pyrene	R2276473	J	
	WG604645	SAMP	Benzo(b)fluoranthene	R2276473	J	
	WG604645	SAMP	Chrysene	R2276473	J	
	WG604645	SAMP	Fluorene	R2276473	J	
	WG604645	SAMP	Pyrene	R2276473	J	
	WG604645	SAMP	2-Chloronaphthalene	R2276473	J	
	WG604645	SAMP	Nitrobenzene-d5	R2276473	J7	
	WG604645	SAMP	2-Fluorobiphenyl	R2276473	J7	
	WG604645	SAMP	p-Terphenyl-d14	R2276473	J7	
	L586821-07	WG604652	SAMP	o-Terphenyl	R2276393	J7
WG604650		SAMP	TPH (GC/FID) Low Fraction	R2274794	J	
WG604649		SAMP	Toluene	R2275095	J	
WG604649		SAMP	Total Xylenes	R2275095	J	
WG604645		SAMP	Anthracene	R2276473	J	
WG604645		SAMP	Acenaphthene	R2276473	J	
WG604645		SAMP	Acenaphthylene	R2276473	J	
WG604645		SAMP	Benzo(a)anthracene	R2276473	J	
WG604645		SAMP	Benzo(a)pyrene	R2276473	J	
WG604645		SAMP	Benzo(b)fluoranthene	R2276473	J	
WG604645		SAMP	Benzo(g,h,i)perylene	R2276473	J	
WG604645		SAMP	Chrysene	R2276473	J	
WG604645		SAMP	Fluoranthene	R2276473	J	

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L586821-08	WG604645	SAMP	Pyrene	R2276473	J
	WG604645	SAMP	Nitrobenzene-d5	R2276473	J7
	WG604645	SAMP	2-Fluorobiphenyl	R2276473	J7
	WG604645	SAMP	p-Terphenyl-d14	R2276473	J7
	WG604652	SAMP	o-Terphenyl	R2276393	J7
	WG604649	SAMP	Benzene	R2275095	J
	WG604649	SAMP	Toluene	R2275095	J
	WG604649	SAMP	Total Xylenes	R2275095	J
	WG604645	SAMP	Anthracene	R2276473	J
	WG604645	SAMP	Acenaphthene	R2276473	J
	WG604645	SAMP	Acenaphthylene	R2276473	J
	WG604645	SAMP	Benzo(a)anthracene	R2276473	J
	WG604645	SAMP	Benzo(a)pyrene	R2276473	J
	WG604645	SAMP	Benzo(b)fluoranthene	R2276473	J
	WG604645	SAMP	Chrysene	R2276473	J
	WG604645	SAMP	Fluoranthene	R2276473	J
	WG604645	SAMP	Fluorene	R2276473	J
	WG604645	SAMP	Pyrene	R2276473	J
	WG604645	SAMP	2-Chloronaphthalene	R2276473	J
	WG604645	SAMP	Nitrobenzene-d5	R2276473	J7
	WG604645	SAMP	2-Fluorobiphenyl	R2276473	J7
	WG604645	SAMP	p-Terphenyl-d14	R2276473	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

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  
07/31/12 at 16:42:45

TSR Signing Reports: 134  
R4 - Rush: Three Day

Log BTEX by 8260 unless otherwise noted

Sample: L586821-01 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41

Sample: L586821-04 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41

Sample: L586821-05 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41

Sample: L586821-06 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41

Sample: L586821-07 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41

Sample: L586821-08 Account: OXYGJCO Received: 07/26/12 09:00 Due Date: 07/31/12 00:00 RPT Date: 07/31/12 16:41



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Tax I.D. 62-0814289

Est. 1970

Daniel Padilla  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Wednesday August 15, 2012

Report Number: L588966

Samples Received: 08/08/12

Client Project: WA-000346-0013-10

Description: MCDA

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:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 15, 2012

Date Received : August 08, 2012  
 Description : MCDA  
 Sample ID : MCDA-CENTER-080712  
 Collected By : CJB  
 Collection Date : 08/07/12 11:26

ESC Sample # : L588966-01

Site ID : MCDA

Project # : WA-000346-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	3.2	10.	mg/kg	O	3060A/7	08/10/12	5
Chromium,Trivalent	28.	0.17	10.	mg/kg		Calc.	08/11/12	1
ORP	170			mV		2580	08/10/12	1
pH	8.6			su	T8	9045D	08/14/12	1
Sodium Adsorption Ratio	6.7					Calc.	08/13/12	1
Specific Conductance	690			umhos/cm		9050AMo	08/14/12	1
Mercury	0.024	0.00080	0.020	mg/kg	P1	7471	08/11/12	1
Arsenic	3.9	0.32	1.0	mg/kg		6010B	08/11/12	1
Barium	500	0.050	0.25	mg/kg		6010B	08/11/12	1
Cadmium	0.32	0.040	0.25	mg/kg		6010B	08/11/12	1
Chromium	28.	0.085	0.50	mg/kg		6010B	08/11/12	1
Copper	22.	0.21	1.0	mg/kg		6010B	08/11/12	1
Lead	13.	0.090	0.25	mg/kg		6010B	08/11/12	1
Nickel	18.	0.26	1.0	mg/kg		6010B	08/11/12	1
Selenium	6.0	0.32	1.0	mg/kg		6010B	08/11/12	1
Silver	U	0.16	0.50	mg/kg		6010B	08/11/12	1
Zinc	58.	0.34	1.5	mg/kg		6010B	08/11/12	1
TPH (GC/FID) Low Fraction	0.33	0.11	0.50	mg/kg	J	8015D/G	08/09/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.0			% Rec.		602/801	08/09/12	5
Benzene	U	0.0014	0.0050	mg/kg		8260B	08/09/12	5
Toluene	U	0.0022	0.025	mg/kg		8260B	08/09/12	5
Ethylbenzene	U	0.0015	0.0050	mg/kg		8260B	08/09/12	5
Total Xylenes	U	0.0035	0.015	mg/kg		8260B	08/09/12	5
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	08/09/12	5
Dibromofluoromethane	101.			% Rec.		8260B	08/09/12	5
a,a,a-Trifluorotoluene	103.			% Rec.		8260B	08/09/12	5
4-Bromofluorobenzene	105.			% Rec.		8260B	08/09/12	5
TPH (GC/FID) High Fraction	6.4	0.77	4.0	mg/kg		3546/DR	08/10/12	1
Surrogate recovery(%) o-Terphenyl	55.1			% Rec.		3546/DR	08/10/12	1

U = ND (Not Detected)  
 MDL = Minimum Detection Limit = LOD = TRRP SDL  
 RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL  
 Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 08/15/12 09:27 Printed: 08/15/12 09:27  
 L588966-01 (CR6) - Diluted due to sample color interference.  
 L588966-01 (PH) - 8.6@20.5c  
 L588966-01 (SV8270PAHSIM) - Dilution due to matrix



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REPORT OF ANALYSIS

Daniel Padilla  
 OXY USA Inc - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 15, 2012

Date Received : August 08, 2012  
 Description : MCDA  
 Sample ID : MCDA-CENTER-080712  
 Collected By : CJB  
 Collection Date : 08/07/12 11:26

ESC Sample # : L588966-01

Site ID : MCDA

Project # : WA-000346-0013-10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.015	0.12	mg/kg		8270C-S	08/09/12	20
Acenaphthene	0.035	0.014	0.12	mg/kg	J	8270C-S	08/09/12	20
Acenaphthylene	0.011	0.011	0.12	mg/kg	J	8270C-S	08/09/12	20
Benzo(a)anthracene	0.032	0.018	0.12	mg/kg	J	8270C-S	08/09/12	20
Benzo(a)pyrene	0.018	0.012	0.12	mg/kg	J	8270C-S	08/09/12	20
Benzo(b)fluoranthene	0.019	0.016	0.12	mg/kg	J	8270C-S	08/09/12	20
Benzo(g,h,i)perylene	U	0.025	0.12	mg/kg		8270C-S	08/09/12	20
Benzo(k)fluoranthene	U	0.027	0.12	mg/kg		8270C-S	08/09/12	20
Chrysene	0.044	0.022	0.12	mg/kg	J	8270C-S	08/09/12	20
Dibenz(a,h)anthracene	U	0.022	0.12	mg/kg		8270C-S	08/09/12	20
Fluoranthene	0.032	0.021	0.12	mg/kg	J	8270C-S	08/09/12	20
Fluorene	0.080	0.011	0.12	mg/kg	J	8270C-S	08/09/12	20
Indeno(1,2,3-cd)pyrene	U	0.023	0.12	mg/kg		8270C-S	08/09/12	20
Naphthalene	0.30	0.013	0.12	mg/kg		8270C-S	08/09/12	20
Phenanthrene	0.14	0.015	0.12	mg/kg		8270C-S	08/09/12	20
Pyrene	0.046	0.012	0.12	mg/kg	J	8270C-S	08/09/12	20
1-Methylnaphthalene	0.24	0.016	0.12	mg/kg		8270C-S	08/09/12	20
2-Methylnaphthalene	0.47	0.012	0.12	mg/kg		8270C-S	08/09/12	20
2-Chloronaphthalene	U	0.012	0.12	mg/kg		8270C-S	08/09/12	20
Surrogate Recovery								
Nitrobenzene-d5	49.2			% Rec.	J7	8270C-S	08/09/12	20
2-Fluorobiphenyl	89.0			% Rec.	J7	8270C-S	08/09/12	20
p-Terphenyl-d14	90.2			% Rec.	J7	8270C-S	08/09/12	20

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Note:

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Reported: 08/15/12 09:27 Printed: 08/15/12 09:27

L588966-01 (CR6) - Diluted due to sample color interference.

L588966-01 (PH) - 8.6@20.5c

L588966-01 (SV8270PAHSIM) - Dilution due to matrix

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L588966-01	WG606602	SAMP	Chromium,Hexavalent	R2297933	O
	WG607209	SAMP	Mercury	R2299495	P1
	WG606866	SAMP	TPH (GC/FID) Low Fraction	R2297334	J
	WG607556	SAMP	pH	R2302013	T8
	WG606758	SAMP	Acenaphthene	R2298253	J
	WG606758	SAMP	Acenaphthylene	R2298253	J
	WG606758	SAMP	Benzo(a)anthracene	R2298253	J
	WG606758	SAMP	Benzo(a)pyrene	R2298253	J
	WG606758	SAMP	Benzo(b)fluoranthene	R2298253	J
	WG606758	SAMP	Chrysene	R2298253	J
	WG606758	SAMP	Fluoranthene	R2298253	J
	WG606758	SAMP	Fluorene	R2298253	J
	WG606758	SAMP	Pyrene	R2298253	J
	WG606758	SAMP	Nitrobenzene-d5	R2298253	J7
	WG606758	SAMP	2-Fluorobiphenyl	R2298253	J7
	WG606758	SAMP	p-Terphenyl-d14	R2298253	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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- 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  
08/15/12 at 09:27:21

TSR Signing Reports: 134  
R5 - Desired TAT

Log BTEX by 8260 unless otherwise noted

Sample: L588966-01 Account: OXYGJCO Received: 08/08/12 09:00 Due Date: 08/15/12 00:00 RPT Date: 08/15/12 09:27