

FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY

#6738

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): _____

OGCC Operator Number: <u>66571</u>	Contact Name and Telephone: <u>Daniel I. Padilla</u>
Name of Operator: <u>OXY USA WTP LP</u>	No: <u>970.263.3637</u>
Address: <u>760 Horizon Drive, Suite 101</u>	Fax: <u>970.263.3694</u>
City: <u>Grand Junction</u> State: <u>CO</u> Zip: <u>81506</u>	
API Number: <u>05-045-07810</u> County: <u>Garfield</u>	
Facility Name: <u>617-41 Blow-down pit</u> Facility Number: <u>273646</u>	
Well Name: <u>Cascade Creek</u> Well Number: <u>617-41</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NENE, SEC 17, T6S, R97W, 6PM</u> Latitude: <u>39.52817</u> Longitude: <u>-108.236411</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Not Applicable

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Non-crop land rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Parachute-Irigul complex 5-30% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Nearest water well is ~6336' west of the pit. A natural drainage is ~150 south of the pit and flows into the intermittent drainage located ~950' to the southwest. The unnamed drainage connects with Conn Creek ~ 5545' south of pit.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	<u>N/A</u>	<u>Laboratory analytical results</u>
<input type="checkbox"/> Vegetation	<u>N/A</u>	<u>Visual</u>
<input type="checkbox"/> Groundwater	<u>N/A</u>	<u>Visual inspection below pit liner</u>
<input type="checkbox"/> Surface Water	<u>N/A</u>	<u>Visual</u>

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Oxy permitted the pit as a blow-down pit in September 2004. Oxy closed the pit in 2008 and is providing this pit closure form/plan for COGCC review/approval.

Describe how source is to be removed:

In 2008, Oxy removed liquids from inside the blow-down pit, no solids were encountered. Liquids removed from the pit were placed into Oxy's water system for reuse. Oxy disposed of the pit liner at the Garfield County Landfill. Based on the sampling results of the pit bottom, all analytes are found to be below allowable concentration levels except for arsenic (As) and specific conductance (EC). Although the As concentrations are above the COGCC regulated concentration, Oxy collected background samples in undisturbed locations from an adjacent pad with the same soil type (Parachute-Irigul complex, 5 to 30 percent slopes) which identified elevated concentrations of As to be above concentrations found in the pit bottom composite sample. Following the clearance samples collected from the pit bottom, Oxy constructed CC-Pond 11 (Facility ID 414399), a produced water storage pond in the footprint of the pit. To address the high concentrations of EC, Oxy will place a minimum three feet cap to provide a sufficient agronomic zone for revegetation efforts following the closure of existing Pond 11. The site will be contoured to be level with the existing pad grade.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Liquids were removed from the blow-down pit and no solids were encountered. Liquids present in the pit were placed into Oxy's water system for reuse. The 30-mil HDPE liner was disposed of at the Garfield County Landfill. Analytical concentrations found in the pit bottom are below the COGCC's Table 910-1 concentrations except for As and EC. Oxy collected background samples in undisturbed locations from an adjacent pad with the same soil type which identified elevated concentrations of arsenic to be above concentrations found in the pit bottom. To address the high concentrations of EC, Oxy will place a minimum three feet cap to provide a sufficient agronomic zone for revegetation efforts following the closure of existing Pond 11. The site will be contoured to be level with the existing pad grade.

Submit Page 2 with Page 1

Pit Facility ID # 273646
 Location ID # 324160
 API # 04507810

FORM
 27
 Rev 8/99

State of Colorado
 Oil and Gas Conservation Commission
 1120 Lincoln Street, Suite 801, Denver, Colorado 80203
 (303)894-2100 Fax:(303)894-2109



Tracking Number: _____
 Name of Operator: _____
 OGCC Operator No: _____
 Received Date: _____
 Well Name & No: _____
 Facility Name & No: 617-41 Blow-down pit

Page 2
REMEDATION WORKPLAN (Cont.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

No groundwater was impacted by the pit. The pit was lined with a 30-mil HDPHE liner. This pit was used as a blow-down pit and no solids were encountered in the pit during closure activities. During excavation of the pit liner, an Oxy contractor was present to observe the soil below the liner. The contractor collected soil samples from below the pit liner to ensure environmental impacts were not present. Laboratory analytical results are included which identify the approximate sampling location within the pit at depth and compliance with the COGCC Table 910-1 allowable concentrations, except for As and EC. Oxy collected background samples in undisturbed locations from an adjacent pad with the same soil type which identified elevated concentrations of arsenic to be above concentrations found in the pit bottom. To address elevated concentrations of EC, Oxy will cap the bottom of CC Pond 11 with at least three feet of native material to ensure a sufficient agronomic zone.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The blow-down pit was constructed at grade with Oxy's Cascade Creek 617-41 well pad, and was approximately 15 feet deep. The pit liner was sent to the Garfield County Landfill. The reclaimed pit was use in the construction of CC-Pond 11. Final pad reclamation will occur at the end of the life of the pad and will be level with the pad grade to minimize stormwater runoff.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? Y N If yes, describe:

Oxy will monitor stormwater compliance following the closure and revegetation of the 617-41 pad.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Oxy removed all liquids within the blow-down pit and redistributed them into Oxy's water system for reuse. No solids were encountered during removal of the liquids from the pit. Note that the pit liner was disposed of at the Garfield County Landfill.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 7/15/2008 Date Site Investigation Completed: 8/17/2008 Date Remediation Plan Submitted: 5/18/11
 Remediation Start Date: 8/21/2008 Anticipated Completion Date: 5/27/2011 Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Daniel L. Padilla Signed: _____
 Title: Regulatory Advisor Date: 5/18/11

OGCC Approved: [Signature] Title: FOR Date: 12/09/2011
Chris Camfield
EPS NW Region

Pit Reclaims - Cascade Creek

Pad #:	617-41
Sample Date:	9/17/2008
Clearance Achieved Date:	

	MCL (mg/kg)	Sample Identifications (mg/kg)						
		Post Reclaim 9/17/08	Excavation Background (1) 10- 12' 1/27/11	Excavation Background (2) 10- 12' 1/27/11	South Background 1/27/11	Southeast Background 1/27/11	East Background 1/27/11	Northeast Background 1/27/11
Organics in Soil								
TPH (GRO and DRO)	500	130.0	BDL	BDL	1.9	1.6	0.9	3.2
Benzene	0.17	<0.0025	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	85	<0.025	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	<0.0025	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes	175	<0.0075	BDL	BDL	BDL	BDL	BDL	BDL
Organics in Soil (PAH's)								
Acenaphthene	1000	NA	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	1000	NA	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(A)anthracene	0.22	NA	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(B)fluoranthene	0.22	NA	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(K)fluoranthene	2.2	NA	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(A)pyrene	0.022	NA	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	22	NA	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(A,H)anthracene	0.022	NA	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	1000	NA	BDL	BDL	BDL	BDL	BDL	BDL
Flourene	1000	NA	BDL	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3,C,D)pyrene	0.22	NA	BDL	BDL	BDL	BDL	BDL	BDL
Napthalene	23	NA	BDL	BDL	BDL	BDL	BDL	BDL
Pyrene	1000	NA	BDL	BDL	BDL	BDL	BDL	BDL
Inorganics in Soil								
EC	<4 mmhos/cm or 2X background	5.20	0.098	0.1	0.051	0.059	0.065	0.064
SAR	<12	4.5	1.4	1.1	0.61	0.41	0.41	0.44
pH	6-9	7.7	8.3	8.4	6.2	6.6	6.6	6.6
Metals in Soils								
Arsenic	0.39	9.2	17	18	4.9	17	13	10
Barium	15000	1300	310	260	280	420	320	280
Boron	2 (mg/L)	13 (6010B)	BDL	3.3	5.4	3.5	3.7	1.8
Cadmium	70	0.26	BDL	BDL	0.068	BDL	BDL	BDL
Chromium	12000	48.0	71	63	33	61	50	43
Chromium VI	23	NA	BDL	BDL	7.2	8.4	8.6	7.8
Copper	3100	16.0	17	18	14	14	12	9.2
Lead	400	14.0	13	13	12	12	9.8	8.5
Mercury	23	0.021	0.017	0.019	0.0089	0.012	0.0069	0.0097
Selenium	390	27.0	BDL	BDL	BDL	BDL	BDL	BDL
Silver	390	<1.0	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	23000	<0.50	47	49	45	42	35	29

BDL = Below detection limit

** COGCC removed the LDNR True Total Method and is now allowing the SW846 method (per a clarification to the new rules)

*** COGCC allows us to no longer sample for Boron (per a clarification to the new rules)



697-08-53 Pad

NE Back

BE-1
BE-2

E Back

S Back

SE Back

617-41 Pad

-  Approximate location of blow-down pit
-  Blow-down pit bottom composite location
-  Background sample location



ENVIRONMENTAL
SCIENCE CORP.

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Est. 1970

REPORT OF ANALYSIS

Blair Rollins
Walsh Env.- Grand Junction
535 Grand Avenue
Grand Junction, CO 81501

October 06, 2008

Date Received : September 20, 2008
Description : Pit Bottom Sampling
Sample ID : 617-41
Collected By : David Spencer
Collection Date : 09/17/08 08:28

ESC Sample # : L366196-03

Site ID :

Project # : 7830-060

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	7.7		su	9045D	09/23/08	1
Sodium Adsorption Ratio	4.5			Calc.	09/24/08	1
Specific Conductance	5200		umhos/cm	9050AMod	09/23/08	1
Mercury	0.021	0.020	mg/kg	7471	09/25/08	1
Arsenic	9.2	1.0	mg/kg	6010B	09/29/08	1
Beryllium	0.70	0.10	mg/kg	6010B	09/29/08	1
Boron	13.	10.	mg/kg	6010B	09/30/08	1
Cadmium	0.26	0.25	mg/kg	6010B	09/29/08	1
Chromium	48.	0.50	mg/kg	6010B	09/29/08	1
Copper	16.	1.0	mg/kg	6010B	09/29/08	1
Lead	14.	0.25	mg/kg	6010B	09/29/08	1
Molybdenum	1.4	0.25	mg/kg	6010B	09/29/08	1
Nickel	27.	1.0	mg/kg	6010B	09/29/08	1
Selenium	BDL	1.0	mg/kg	6010B	09/29/08	1
Silver	BDL	0.50	mg/kg	6010B	09/29/08	1
Zinc	67.	1.5	mg/kg	6010B	09/29/08	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/25/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/25/08	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/25/08	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/25/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/25/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene (FID)	92.9		% Rec.	8021/8015	09/25/08	5
a,a,a-Trifluorotoluene (PID)	99.6		% Rec.	8021/8015	09/25/08	5
TPH (GC/FID) High Fraction	130	4.0	mg/kg	3546/DRO	09/26/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	68.6		% Rec.	3546/DRO	09/26/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L366196-03 (PH) - 7.7@21.8c



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

Report Summary

Thursday February 03, 2011

Report Number: L499536

Samples Received: 01/29/11

Client Project:

Description: Pond 6 background Samples

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

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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

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : BE-1 1155 10-12 FT
 Collected By : Travis Brophy
 Collection Date : 01/27/11 11:55

ESC Sample # : L499536-01

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	U	0.42	2.0	mg/kg		3060A/7	02/03/11	1
Chromium, Trivalent	71.	0.17	2.0	mg/kg		Calc.	02/02/11	1
ORP	110			mV		2580	02/01/11	1
pH	8.3			su		9045D	02/02/11	1
Sodium Adsorption Ratio	1.4					Calc.	02/01/11	1
Specific Conductance	98.			umhos/cm		9050AMo	02/02/11	1
Mercury	0.017	0.0015	0.020	mg/kg	JP1	7471	02/01/11	1
Arsenic	17.	0.32	1.0	mg/kg	J3	6010B	02/02/11	1
Barium	310	0.050	0.25	mg/kg	J3V	6010B	02/02/11	1
Boron	U	0.78	10.	mg/kg		6010B	02/02/11	1
Cadmium	U	0.20	1.3	mg/kg	0	6010B	02/02/11	5
Chromium	71.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	17.	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	13.	0.090	0.25	mg/kg	J3	6010B	02/02/11	1
Nickel	43.	0.26	1.0	mg/kg	J3J6	6010B	02/02/11	1
Selenium	U	1.6	5.0	mg/kg	0	6010B	02/02/11	5
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	47.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	96.4			% Rec.		8021/80	01/30/11	5
a,a,a-Trifluorotoluene(PID)	97.7			% Rec.		8021/80	01/30/11	5
TPH (GC/FID) High Fraction	U	0.77	4.0	mg/kg		3546/DR	02/02/11	1
Surrogate recovery(%)								
o-Terphenyl	81.5			% Rec.		3546/DR	02/02/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD

RDL = Reported Detection Limit = LOQ = PQL = EQL

Note:

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 L499536-01 (PH) - 8.3@18.3C



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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : BE-1 1155 10-12 FT
 Collected By : Travis Brophy
 Collection Date : 01/27/11 11:55

ESC Sample # : L499536-01

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzo(a)anthracene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Benzo(a)pyrene	U	0.0073	0.033	mg/kg		8270C	02/02/11	1
Benzo(b)fluoranthene	U	0.0086	0.033	mg/kg		8270C	02/02/11	1
Benzo(g,h,i)perylene	U	0.0050	0.033	mg/kg		8270C	02/02/11	1
Benzo(k)fluoranthene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Chrysene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Dibenz(a,h)anthracene	U	0.0058	0.033	mg/kg		8270C	02/02/11	1
Fluoranthene	U	0.0069	0.033	mg/kg		8270C	02/02/11	1
Fluorene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Indeno(1,2,3-cd)pyrene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Naphthalene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Phenanthrene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Pyrene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Surrogate Recovery								
Nitrobenzene-d5	68.2			% Rec.		8270C	02/02/11	1
2-Fluorobiphenyl	68.3			% Rec.		8270C	02/02/11	1
p-Terphenyl-d14	79.0			% Rec.		8270C	02/02/11	1

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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : BE-2 1200 10-12 FT
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:00

ESC Sample # : L499536-02

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	U	0.42	2.0	mg/kg		3060A/7	02/03/11	1
Chromium, Trivalent	63.	0.17	2.0	mg/kg		Calc.	02/02/11	1
ORP	99.			mV		2580	02/01/11	1
pH	8.4			su		9045D	02/02/11	1
Sodium Adsorption Ratio	1.1					Calc.	02/01/11	1
Specific Conductance	100			umhos/cm		9050AMo	02/02/11	1
Mercury	0.019	0.0015	0.020	mg/kg	J	7471	02/03/11	1
Arsenic	18.	0.32	1.0	mg/kg		6010B	02/02/11	1
Barium	260	0.050	0.25	mg/kg		6010B	02/02/11	1
Boron	3.3	0.78	10.	mg/kg	J	6010B	02/02/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	02/02/11	1
Chromium	63.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	18.	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	13.	0.090	0.25	mg/kg		6010B	02/02/11	1
Nickel	32.	0.26	1.0	mg/kg		6010B	02/02/11	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/02/11	5
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	49.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a,a,a-Trifluorotoluene (FID)	97.0			% Rec.		8021/80	01/30/11	5
a,a,a-Trifluorotoluene (PID)	98.5			% Rec.		8021/80	01/30/11	5
TPH (GC/FID) High Fraction	U	0.77	4.0	mg/kg		3546/DR	02/01/11	1
Surrogate recovery(%)								
o-Terphenyl	78.0			% Rec.		3546/DR	02/01/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	1

U = ND (Not Detected)
 MDL = Minimum Detection Limit = LOD
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 L499536-02 (PH) - 8.4@18.4C



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : BE-2 1200 10-12 FT
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:00

ESC Sample # : L499536-02

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzo(a)anthracene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Benzo(a)pyrene	U	0.0073	0.033	mg/kg		8270C	02/02/11	1
Benzo(b)fluoranthene	U	0.0086	0.033	mg/kg		8270C	02/02/11	1
Benzo(g,h,i)perylene	U	0.0050	0.033	mg/kg		8270C	02/02/11	1
Benzo(k)fluoranthene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Chrysene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Dibenz(a,h)anthracene	U	0.0058	0.033	mg/kg		8270C	02/02/11	1
Fluoranthene	U	0.0069	0.033	mg/kg		8270C	02/02/11	1
Fluorene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Indeno(1,2,3-cd)pyrene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Naphthalene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Phenanthrene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Pyrene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Surrogate Recovery								
Nitrobenzene-d5	73.6			%	Rec.	8270C	02/02/11	1
2-Fluorobiphenyl	76.7			%	Rec.	8270C	02/02/11	1
p-Terphenyl-d14	78.1			%	Rec.	8270C	02/02/11	1

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 L499536-02 (PH) - 8.4@18.4C



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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : S BACK 1150 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 11:50

ESC Sample # : L499536-03
 Site ID :
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	7.2	2.1	10.	mg/kg	J	3060A/7	02/03/11	5
Chromium, Trivalent	26.	0.17	10.	mg/kg		Calc.	02/02/11	1
ORP	63.			mV		2580	02/03/11	1
pH	6.2			su		9045D	02/02/11	1
Sodium Adsorption Ratio	0.61					Calc.	02/01/11	1
Specific Conductance	51.			umhos/cm		9050AMo	02/02/11	1
Mercury	0.0089	0.0015	0.020	mg/kg	J	7471	02/03/11	1
Arsenic	4.9	0.32	1.0	mg/kg		6010B	02/02/11	1
Barium	280	0.050	0.25	mg/kg		6010B	02/02/11	1
Boron	5.4	0.78	10.	mg/kg	J	6010B	02/02/11	1
Cadmium	0.068	0.040	0.25	mg/kg	J	6010B	02/02/11	1
Chromium	33.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	14.	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	12.	0.090	0.25	mg/kg		6010B	02/02/11	1
Nickel	16.	0.26	1.0	mg/kg		6010B	02/02/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/02/11	1
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	45.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a, a, a-Trifluorotoluene (FID)	96.8			% Rec.		8021/80	01/30/11	5
a, a, a-Trifluorotoluene (PID)	99.1			% Rec.		8021/80	01/30/11	5
TPH (GC/FID) High Fraction	1.9	0.77	4.0	mg/kg	J	3546/DR	02/01/11	1
Surrogate recovery(%)								
o-Terphenyl	75.9			% Rec.		3546/DR	02/01/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	1

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 L499536-03 (PH) - 6.2@19.0C



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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : S BACK 1150 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 11:50

ESC Sample # : L499536-03
 Site ID :
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzo (a) anthracene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Benzo (a) pyrene	U	0.0073	0.033	mg/kg		8270C	02/02/11	1
Benzo (b) fluoranthene	U	0.0086	0.033	mg/kg		8270C	02/02/11	1
Benzo (g, h, i) perylene	U	0.0050	0.033	mg/kg		8270C	02/02/11	1
Benzo (k) fluoranthene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Chrysene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Dibenz (a, h) anthracene	U	0.0058	0.033	mg/kg		8270C	02/02/11	1
Fluoranthene	U	0.0069	0.033	mg/kg		8270C	02/02/11	1
Fluorene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Indeno (1, 2, 3-cd) pyrene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Naphthalene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Phenanthrene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Pyrene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Surrogate Recovery								
Nitrobenzene-d5	79.2			% Rec.		8270C	02/02/11	1
2-Fluorobiphenyl	74.6			% Rec.		8270C	02/02/11	1
p-Terphenyl-d14	66.5			% Rec.		8270C	02/02/11	1

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 L499536-03 (PH) - 6.2@19.0C



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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : SE BACK 1214 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:14

ESC Sample # : L499536-04

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	8.4	2.1	10.	mg/kg	J	3060A/7	02/03/11	5
Chromium, Trivalent	52.	0.17	10.	mg/kg		Calc.	02/02/11	1
ORP	110			mV		2580	02/03/11	1
pH	6.6			su		9045D	02/02/11	1
Sodium Adsorption Ratio	0.41					Calc.	02/01/11	1
Specific Conductance	59.			umhos/cm		9050AMo	02/02/11	1
Mercury	0.012	0.0015	0.020	mg/kg	J	7471	02/03/11	1
Arsenic	17.	0.32	1.0	mg/kg		6010B	02/02/11	1
Barium	420	0.050	0.25	mg/kg		6010B	02/02/11	1
Boron	3.5	0.78	10.	mg/kg	J	6010B	02/02/11	1
Cadmium	U	0.20	1.3	mg/kg	O	6010B	02/02/11	5
Chromium	61.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	14.	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	12.	0.090	0.25	mg/kg		6010B	02/02/11	1
Nickel	29.	0.26	1.0	mg/kg		6010B	02/02/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/02/11	1
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	42.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a, a, a-Trifluorotoluene (FID)	96.6			% Rec.		8021/80	01/30/11	5
a, a, a-Trifluorotoluene (PID)	97.2			% Rec.		8021/80	01/30/11	5
TPH (GC/FID) High Fraction	1.6	0.77	4.0	mg/kg	J	3546/DR	02/02/11	1
Surrogate recovery(%)								
o-Terphenyl	71.8			% Rec.		3546/DR	02/02/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	1

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 L499536-04 (PH) - 6.6@18.3C



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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
Description : Pond 6 background Samples
Sample ID : SE BACK 1214 2-6 IN
Collected By : Travis Brophy
Collection Date : 01/27/11 12:14

ESC Sample # : L499536-04

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzo(a)anthracene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Benzo(a)pyrene	U	0.0073	0.033	mg/kg		8270C	02/02/11	1
Benzo(b)fluoranthene	U	0.0086	0.033	mg/kg		8270C	02/02/11	1
Benzo(g,h,i)perylene	U	0.0050	0.033	mg/kg		8270C	02/02/11	1
Benzo(k)fluoranthene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Chrysene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Dibenz(a,h)anthracene	U	0.0058	0.033	mg/kg		8270C	02/02/11	1
Fluoranthene	U	0.0069	0.033	mg/kg		8270C	02/02/11	1
Fluorene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Indeno(1,2,3-cd)pyrene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Naphthalene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Phenanthrene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Pyrene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Surrogate Recovery								
Nitrobenzene-d5	78.3			% Rec.		8270C	02/02/11	1
2-Fluorobiphenyl	70.5			% Rec.		8270C	02/02/11	1
p-Terphenyl-d14	51.9			% Rec.		8270C	02/02/11	1

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REPORT OF ANALYSIS

Alonzo Hernandez
 OKY USA Inc - Grand Junction, CO
 760 Horizon Dr., Ste. 101
 Grand Junction, CO 81506

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : E BACK 1220 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:20

ESC Sample # : L499536-05
 Site ID :
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	8.6	2.1	10.	mg/kg	J	3060A/7	02/03/11	5
Chromium, Trivalent	41.	0.17	10.	mg/kg		Calc.	02/02/11	1
ORP	120			mV		2580	02/03/11	1
pH	6.6			su		9045D	02/02/11	1
Sodium Adsorption Ratio	0.41					Calc.	02/01/11	1
Specific Conductance	65.			umhos/cm		9050AMo	02/02/11	1
Mercury	0.0069	0.0015	0.020	mg/kg	J	7471	02/03/11	1
Arsenic	13.	0.32	1.0	mg/kg		6010B	02/02/11	1
Barium	320	0.050	0.25	mg/kg		6010B	02/02/11	1
Boron	3.7	0.78	10.	mg/kg	J	6010B	02/02/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	02/02/11	1
Chromium	50.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	12.	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	9.8	0.090	0.25	mg/kg		6010B	02/02/11	1
Nickel	22.	0.26	1.0	mg/kg		6010B	02/02/11	1
Selenium	U	1.6	5.0	mg/kg	O	6010B	02/02/11	5
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	35.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a,a,a-Trifluorotoluene (FID)	96.5			%	Rec.	8021/80	01/30/11	5
a,a,a-Trifluorotoluene (PID)	99.4			%	Rec.	8021/80	01/30/11	5
TPH (GC/FID) High Fraction	0.90	0.77	4.0	mg/kg	J	3546/DR	02/01/11	1
Surrogate recovery(%)								
o-Terphenyl	62.7			%	Rec.	3546/DR	02/01/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	1

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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
Description : Pond 6 background Samples
Sample ID : E BACK 1220 2-6 IN
Collected By : Travis Brophy
Collection Date : 01/27/11 12:20

ESC Sample # : L499536-05
Site ID :
Project # :

Table with columns: Parameter, Result, MDL, RDL, Units, Qualifier, Method, Date, Dil. Rows include various chemical compounds like Benzo(a)anthracene, Pyrene, Fluoranthene, etc., with their respective detection results and limits.

U = ND (Not Detected)
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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : NE 1230 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:30

ESC Sample # : L499536-06

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium, Hexavalent	7.8	2.1	10.	mg/kg	J	3060A/7	02/03/11	5
Chromium, Trivalent	35.	0.17	10.	mg/kg		Calc.	02/02/11	1
ORP	130			mV		2580	02/03/11	1
pH	6.6			su		9045D	02/02/11	1
Sodium Adsorption Ratio	0.44					Calc.	02/01/11	1
Specific Conductance	64.			umhos/cm		9050AMo	02/02/11	1
Mercury	0.0097	0.0015	0.020	mg/kg	J	7471	02/03/11	1
Arsenic	10.	0.32	1.0	mg/kg		6010B	02/02/11	1
Barium	280	0.050	0.25	mg/kg		6010B	02/02/11	1
Boron	1.8	0.78	10.	mg/kg	J	6010B	02/02/11	1
Cadmium	U	0.040	0.25	mg/kg		6010B	02/02/11	1
Chromium	43.	0.085	0.50	mg/kg		6010B	02/02/11	1
Copper	9.2	0.21	1.0	mg/kg		6010B	02/02/11	1
Lead	8.5	0.090	0.25	mg/kg		6010B	02/02/11	1
Nickel	19.	0.26	1.0	mg/kg		6010B	02/02/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	02/02/11	1
Silver	U	0.16	0.50	mg/kg		6010B	02/02/11	1
Zinc	29.	0.34	1.5	mg/kg		6010B	02/02/11	1
Benzene	U	0.00090	0.0025	mg/kg		8021/80	01/30/11	5
Toluene	U	0.0015	0.025	mg/kg		8021/80	01/30/11	5
Ethylbenzene	U	0.0013	0.0025	mg/kg		8021/80	01/30/11	5
Total Xylene	U	0.0028	0.0075	mg/kg		8021/80	01/30/11	5
TPH (GC/FID) Low Fraction	U	0.14	0.50	mg/kg		GRO	01/30/11	5
Surrogate Recovery-%								
a, a, a-Trifluorotoluene (FID)	96.3			% Rec.		8021/80	01/30/11	5
a, a, a-Trifluorotoluene (PID)	99.6			% Rec.		8021/80	01/30/11	5
TPH (GC/FID) High Fraction	3.2	0.77	4.0	mg/kg	J	3546/DR	02/02/11	1
Surrogate recovery(%)								
o-Terphenyl	65.0			% Rec.		3546/DR	02/02/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthene	U	0.0082	0.033	mg/kg		8270C	02/02/11	1
Acenaphthylene	U	0.0078	0.033	mg/kg		8270C	02/02/11	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: 02/03/11 15:31 Printed: 02/03/11 15:44
 L499536-06 (PH) - 6.6@18.4C



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 Mt. Juliet, TN 37122
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REPORT OF ANALYSIS

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

February 03, 2011

Date Received : January 29, 2011
 Description : Pond 6 background Samples
 Sample ID : NE 1230 2-6 IN
 Collected By : Travis Brophy
 Collection Date : 01/27/11 12:30

ESC Sample # : L499536-06
 Site ID :
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzo(a)anthracene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Benzo(a)pyrene	U	0.0073	0.033	mg/kg		8270C	02/02/11	1
Benzo(b)fluoranthene	U	0.0086	0.033	mg/kg		8270C	02/02/11	1
Benzo(g,h,i)perylene	U	0.0050	0.033	mg/kg		8270C	02/02/11	1
Benzo(k)fluoranthene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Chrysene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Dibenz(a,h)anthracene	U	0.0058	0.033	mg/kg		8270C	02/02/11	1
Fluoranthene	U	0.0069	0.033	mg/kg		8270C	02/02/11	1
Fluorene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Indeno(1,2,3-cd)pyrene	U	0.0059	0.033	mg/kg		8270C	02/02/11	1
Naphthalene	U	0.0074	0.033	mg/kg		8270C	02/02/11	1
Phenanthrene	U	0.0067	0.033	mg/kg		8270C	02/02/11	1
Pyrene	U	0.0077	0.033	mg/kg		8270C	02/02/11	1
Surrogate Recovery								
Nitrobenzene-d5	71.4			%	Rec.	8270C	02/02/11	1
2-Fluorobiphenyl	69.0			%	Rec.	8270C	02/02/11	1
p-Terphenyl-d14	49.4			%	Rec.	8270C	02/02/11	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD

RDL = Reported Detection Limit = LOQ = PQL = EQL

Note:

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 L499536-06 (PH) - 6.6@18.4C

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L499536-01	WG519652	SAMP	Arsenic	R1561471	J3
	WG519652	SAMP	Barium	R1561471	J3V
	WG519652	SAMP	Cadmium	R1561471	O
	WG519652	SAMP	Lead	R1561471	J3
	WG519652	SAMP	Nickel	R1561471	J3J6
	WG519652	SAMP	Selenium	R1561471	O
	WG519569	SAMP	Mercury	R1559672	JP1
L499536-02	WG519652	SAMP	Boron	R1561471	J
	WG519652	SAMP	Selenium	R1561471	O
L499536-03	WG519636	SAMP	Mercury	R1561770	J
	WG519652	SAMP	Boron	R1561471	J
	WG519652	SAMP	Cadmium	R1561471	J
	WG519706	SAMP	TPH (GC/FID) High Fraction	R1559811	J
L499536-04	WG519190	SAMP	Chromium, Hexavalent	R1561829	J
	WG519636	SAMP	Mercury	R1561770	J
	WG519652	SAMP	Boron	R1561471	J
	WG519652	SAMP	Cadmium	R1561471	O
	WG519706	SAMP	TPH (GC/FID) High Fraction	R1559811	J
	WG519190	SAMP	Chromium, Hexavalent	R1561829	J
L499536-05	WG519636	SAMP	Mercury	R1561770	J
	WG519652	SAMP	Boron	R1561471	J
	WG519652	SAMP	Selenium	R1561471	O
	WG519706	SAMP	TPH (GC/FID) High Fraction	R1559811	J
L499536-06	WG519190	SAMP	Chromium, Hexavalent	R1561829	J
	WG519636	SAMP	Mercury	R1561770	J
	WG519652	SAMP	Boron	R1561471	J
	WG519706	SAMP	TPH (GC/FID) High Fraction	R1559811	J
	WG519190	SAMP	Chromium, Hexavalent	R1561829	J
	WG519636	SAMP	Mercury	R1561770	J

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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
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.

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.