



**605-01 (Rock Springs)  
COGCC Project No. 4622  
July - September 2010 Summary of Events**

November 12, 2010



Prepared by:

11/12/10

**Brett Kennedy  
Sr. HES Specialist**

Reviewed by:

11/12/2010

**Sean Norris  
Regulatory Lead**



1.0 Location:

OXY USA WTP LP  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

Cascade Creek 605-01  
T6S, R97W, S5, SWNW  
Garfield County, Colorado

2.0 Executive Summary:

This quarterly status report has been prepared in order to document release monitoring and interim remedial actions at OXY USA WTP LP's ("OXY") Cascade Creek 605-1 well pad and adjacent springs (Rock Springs). The well pad is located in Section 5, Township 6 South, Range 97 West of the 6th Principal Meridian, Garfield County, Colorado. The well pad is situated east of an unnamed tributary to Crystal Creek, and a release of produced water has extended from the production pit at the well pad to springs (locally known as Rock Springs) which feed the tributary. The well pad and the area upon which the release occurred and surfaced are located on property owned by OXY.

In Quarter (Qtr) 3 of 2010, OXY has completed interim remedial activities at the site, including:

- o Surface water monitoring
- o Monitoring of impoundment conditions
- o Placement and injection oxidizing compounds to augment remediation

The results of the Qtr 3 sampling events indicated that all results declined to below the Maximum Contaminant Level (MCL) with the exception of the South Spring (Map ID 42). Furthermore, the point of compliance (Downstream - Map ID 43) results were all non-detect and never exceeded drinking water standards for hydrocarbons.

The overall reduction of hydrocarbons concentrations indicates the efficacy of OXY's interim remedial activities. On July 23 and August 19, 2010, OXY injected in-situ chemical oxidation compounds into the release point. Based on the benzene concentrations in the South Spring (Map ID 42), Oxy will assess the need for additional in-situ chemical oxidation applications in the Spring of 2011.

Analytical results from total dissolved solids (TDS) samples collected at three of the four the sites were generally below the secondary drinking water standard of 500 mg/L at sampling locations with this one site being slightly above its threshold. Regional surface water naturally contains background concentrations of dissolved solids.

3.0 Interim Remedial and Monitoring Activities:

During Qtr 3, monthly site visits were conducted by OXY personnel to collect water samples for laboratory analyses. The impoundments were observed to ensure they were capturing flow and preventing releases to the environment. Impound bypass was observed at the North Spring. Based on the analytical results being just above and currently below the MCL, bypassing of the North Spring (impoundment) was allowed to continue.

4.0 Water Monitoring – 2010:

A total of 3 sampling events were conducted from July through September 2010. The sampling events were conducted on the following dates:



- o July 29, 2010
- o August 30, 2010
- o September 30, 2010

Samples were collected by OXY personnel on a regular basis. Locations sampled in Qtr 3 are identified in the following table, along with their corresponding Map Identifiers (see Appendix A).

Map ID	Sample Location	Location Description
40	North Spring	Trench/dam intercepting northern spring area
42	South Spring	Trench/dam intercepting southern spring area
44	Downstream	Downgradient sample location (Compliance sample location)
44	Lower Pit	Dam constructed during remedial activities

**5.0 Water Quality Results:**

Monthly water quality sampling typically consists of sampling for BTEX/GRO. Furthermore, field parameters (TDS, EC, pH, and temperature) are collected utilizing a calibrated Hanna Instruments HI991300.

During Qtr 3 of 2010, Petroleum hydrocarbons were detected at concentrations greater than MCLs only at the impoundment locations including the North Spring (Map ID 40) and South Spring (Map ID 42). All other sample locations were below the MCL. A perspective of Qtr 3 sample results is provided below..

North Spring (Map ID 40)						
Date	Benzene (MCL= 0.005 mg/L)	Toluene (MCL= 0.56 to 1 mg/L)	Ethylbenzene (MCL= 0.7 mg/L)	Xylenes (MCL= 1.4 to 10 mg/L)	GRO (No MCL)	TDS
07/29/2010	0.0056	<0.00021	0.0029	0.018	0.31	299
08/30/2010	0.0042	0.00071	0.0019	0.016	<0.040	431
09/30/2010	0.0029	0.00059	0.0010	0.010	<0.040	440

South Spring (Map ID42)						
Date	Benzene (MCL= 0.005 mg/L)	Toluene (MCL= 0.56 to 1 mg/L)	Ethylbenzene (MCL= 0.7 mg/L)	Xylenes (MCL= 1.4 to 10 mg/L)	GRO (No MCL)	TDS
07/29/2010	0.040	<0.00021	0.0088	0.19	1.4	540
08/30/2010	0.054	0.0008	0.016	0.27	1.3	575
09/30/2010	0.046	0.00052	0.014	0.21	1.1	540

Additionally, minor hydrocarbon impacts detected below the MCLs were observed at the Lower Pit (Map ID 44).

Lower Pit (Map ID 44)						
Date	Benzene (MCL= 0.005 mg/L)	Toluene (MCL= 0.56 to 1 mg/L)	Ethylbenzene (MCL= 0.7 mg/L)	Xylenes (MCL= 1.4 to 10 mg/L)	GRO (No MCL)	TDS
07/29/2010	<0.00013	<0.00021	<0.00021	0.00098	<0.040	374
08/30/2010	0.00059	<0.00021	<0.00021	0.00096	<0.040	447
09/30/2010	<0.00013	<0.00021	<0.00021	<0.00043	<0.040	487

Furthermore, hydrocarbons were not detected at the Downstream (Map ID 43) location.



<b>Upstream (Map ID 41)</b>						
<b>Date</b>	<b>Benzene (MCL= 0.005 mg/L)</b>	<b>Toluene (MCL= 0.56 to 1 mg/L)</b>	<b>Ethylbenzene (MCL= 0.7 mg/L)</b>	<b>Xylenes (MCL= 1.4 to 10 mg/L)</b>	<b>GRO (No MCL)</b>	<b>TDS</b>
07/29/2010	<0.00013	<0.00021	<0.00021	<0.00043	<0.040	436
08/30/2010	<0.00013	<0.00021	<0.00021	<0.00043	<0.040	472
09/30/2010	<0.00013	<0.00021	<0.00021	<0.00043	<0.040	458

TDS results for samples collected at the site generally were below the secondary drinking water standard of 500 mg/L. The South Spring regularly exceeded the drinking water standard and ranged from 540 to 575 ppm. The complete laboratory analytical reports are provided in Appendix B.

6.0 In-Situ Chemical Oxidation Applications:

RegenOx®, a proprietary in-situ chemical oxidation (ISCO) compound manufactured by Regenesis, was applied in the vicinity of the former pit on the well pad. ISCO applications were completed according to the following schedule:

**ISCO Application Schedule**

<b>Injection</b>	<b>Total lbs RegenOx</b>	<b>lbs Part A</b>	<b>lbs Part B</b>	<b>Water needed Part A</b>	<b>Water needed Part B</b>	<b>Status</b>
1	900	900	0	2060	0	<b>Completed 07/23/2010</b>
2	900	900	0	2060	0	<b>Completed 08/19/2010</b>

ISCO injected into trench constructed on October 30, 2009.

Based on elevations observed in the South Spring (Map ID 42). Oxy intends to work with a third part consultant in the spring of 2011 to assess the needs for additional ISCO treatment.

7.0 Conclusions:

In Qtr 3 2010, all of the locations have declined to below the MCL with the exception of the South Spring (Map ID 42). Water samples from the point of compliance (Downstream, Map ID 43) were all non-detect and below the MCL. The reduction of hydrocarbons indicates the overall efficacy of OXY’s interim remedial activities. On July 23, 2010 and August 19, 2010, OXY injected in-situ chemical oxidation compounds into the release point. OXY will continue to monitor the water levels and collect water samples on a monthly basis, as weather permits. A year-end progress report for the release will be prepared to detail sampling, remediation efforts, and other information collected during 2010.



Appendix A





**OXY USA WTP LP**

760 Horizon Dr., Suite 101  
Grand Junction, CO 81506  
Phone 970.263.3600

## **Appendix B**





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

Tax I.D. 62-0814289

Est. 1970

Brett Kennedy  
Oxy USA WTP LP - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Wednesday August 04, 2010

Report Number: L471710

Samples Received: 07/31/10

Client Project:

Description:

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

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

Brett Kennedy  
 Oxy USA WTP LP - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 04, 2010

Date Received : July 31, 2010  
 Description :

ESC Sample # : L471710-01

Sample ID : 42 SOUTH SPRING

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 07/29/10 11:45

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.040	0.00013	0.00050	mg/l		8021/80	08/01/10	1
Toluene	U	0.00021	0.0050	mg/l		8021/80	08/01/10	1
Ethylbenzene	0.0088	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Total Xylene	0.19	0.00043	0.0015	mg/l		8021/80	08/01/10	1
TPH (GC/FID) Low Fraction	1.4	0.040	0.10	mg/l		GRO	08/01/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	102.			% Rec.		8021/80	08/01/10	1
a,a,a-Trifluorotoluene(PID)	87.4			% Rec.		8021/80	08/01/10	1

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

Note:  
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REPORT OF ANALYSIS

Brett Kennedy  
 Oxy USA WTP LP - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 04, 2010

Date Received : July 31, 2010  
 Description :

ESC Sample # : L471710-02

Sample ID : 40 NORTH SPRING 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 07/29/10 11:35

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.0056	0.00013	0.00050	mg/l		8021/80	08/01/10	1
Toluene	U	0.00021	0.0050	mg/l		8021/80	08/01/10	1
Ethylbenzene	0.0029	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Total Xylene	0.018	0.00043	0.0015	mg/l		8021/80	08/01/10	1
TPH (GC/FID) Low Fraction	0.31	0.040	0.10	mg/l		GRO	08/01/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	105.			% Rec.		8021/80	08/01/10	1
a,a,a-Trifluorotoluene(PID)	89.6			% Rec.		8021/80	08/01/10	1

U = ND (Not Detected)  
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REPORT OF ANALYSIS

Brett Kennedy  
 Oxy USA WTP LP - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 04, 2010

Date Received : July 31, 2010  
 Description :

ESC Sample # : L471710-03

Sample ID : 44 LOWER PIT 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 07/29/10 11:52

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.00013	0.00050	mg/l		8021/80	08/01/10	1
Toluene	U	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Total Xylene	0.00098	0.00043	0.0015	mg/l	J	8021/80	08/01/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	08/01/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	107.			% Rec.		8021/80	08/01/10	1
a,a,a-Trifluorotoluene(PID)	89.7			% Rec.		8021/80	08/01/10	1

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REPORT OF ANALYSIS

Brett Kennedy  
 Oxy USA WTP LP - Grand Junction, CO  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

August 04, 2010

Date Received : July 31, 2010  
 Description :

ESC Sample # : L471710-04

Sample ID : 43 DOWNSTREAM 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 07/29/10 11:59

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.00013	0.00050	mg/l		8021/80	08/01/10	1
Toluene	U	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	08/01/10	1
Total Xylene	U	0.00043	0.0015	mg/l		8021/80	08/01/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	08/01/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	105.			% Rec.		8021/80	08/01/10	1
a,a,a-Trifluorotoluene(PID)	89.4			% Rec.		8021/80	08/01/10	1

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

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L471710-03	WG491399	SAMP	Total Xylene	R1310428	J

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

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  
08/04/10 at 09:32:58

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L471710-01 Account: OXYWTPGJCO Received: 07/31/10 09:00 Due Date: 08/06/10 00:00 RPT Date: 08/04/10 09:32  
Sample: L471710-02 Account: OXYWTPGJCO Received: 07/31/10 09:00 Due Date: 08/06/10 00:00 RPT Date: 08/04/10 09:32  
Sample: L471710-03 Account: OXYWTPGJCO Received: 07/31/10 09:00 Due Date: 08/06/10 00:00 RPT Date: 08/04/10 09:32  
Sample: L471710-04 Account: OXYWTPGJCO Received: 07/31/10 09:00 Due Date: 08/06/10 00:00 RPT Date: 08/04/10 09:32

Company Name/Address: **OXY USA - Grand Junction, CO**  
 WTP LP  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody Page 1 of 1

Prepared by:

**ENVIRONMENTAL SCIENCE CORP.**

12065 Lebanon Road  
 Mt. Juliet, TN 37122

Phone (615) 758-5858  
 Phone (800) 767-5859  
 FAX (615) 758-5859

**B091**

Report to: Brett Kennedy Email to: brett\_kennedy@oxy.com

Project Description: 605-01 City/State Collected: ---

Phone: (970) 263-3601 Client Project #: --- ESC Key: ---

FAX: ---

Collected by: Brett Kennedy Site/Facility ID#: --- P.O.#: ---

Collected by (signature): Brett Kennedy Immediately Packed on Ice N --- Y ✓

**Rush?** ( Lab MUST Be Notified )

\_\_\_ Same Day..... 200%  
 \_\_\_ Next Day..... 100%  
 \_\_\_ Two Day..... 50%  
✓ Three Day..... 25%

Date Results Needed: Email? \_\_\_No ✓Yes FAX? ✓No ---Yes

No. of Cntrs

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Remarks/Contaminant	Sample # (lab only)
#42 South Spring	grab	SW	0-6"	8/30/10	0935	2		L476578 -01
#40 North Spring	↓	↓	↓	↓	0928	2		-02
#44 Lower Pit	↓	↓	↓	↓	0942	2		-03
#43 Downstream	↓	↓	↓	↓	0948	2		-04

BTEX 16RD

\*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other SW

Remarks: 4341 9607 1699 surface water

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) <u>Brett Kennedy</u>	Date: <u>8/31/10</u> Time: <u>1203</u>	Received by: (Signature) <u>[Signature]</u>	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: (lab use only)
Relinquished by: (Signature) <u>[Signature]</u>	Date: _____ Time: _____	Received by: (Signature) <u>[Signature]</u>	Temp: <u>4.8°C</u> Bottles Received: <u>8V</u>	CoC Seals Intact <u>---</u> Y <u>---</u> N <u>✓</u> NA
Relinquished by: (Signature) <u>[Signature]</u>	Date: _____ Time: _____	Received for lab by: (Signature) <u>J. Ellis</u>	Date: <u>09-01-10</u> Time: <u>0900</u>	pH Checked: _____ NCF: _____



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Est. 1970

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

## Report Summary

Sunday September 05, 2010

Report Number: L476578

Samples Received: 09/01/10

Client Project:

Description: 605-01

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

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

September 05, 2010

Date Received : September 01, 2010  
 Description : 605-01

ESC Sample # : L476578-01

Sample ID : 42 SOUTH SPRING 0-6IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 08/30/10 09:35

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.054	0.00013	0.00050	mg/l		8021/80	09/02/10	1
Toluene	0.00080	0.00021	0.0050	mg/l	J	8021/80	09/02/10	1
Ethylbenzene	0.016	0.00021	0.00050	mg/l		8021/80	09/02/10	1
Total Xylene	0.27	0.00043	0.0015	mg/l		8021/80	09/02/10	1
TPH (GC/FID) Low Fraction	1.3	0.040	0.10	mg/l		GRO	09/02/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	85.7			% Rec.		8021/80	09/02/10	1
a,a,a-Trifluorotoluene(PID)	99.4			% Rec.		8021/80	09/02/10	1

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

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Reported: 09/05/10 18:53 Printed: 09/05/10 18:53



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REPORT OF ANALYSIS

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

September 05, 2010

Date Received : September 01, 2010  
 Description : 605-01

ESC Sample # : L476578-02

Sample ID : 40 NORTH SPRING 0-6IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 08/30/10 09:28

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.0042	0.00013	0.00050	mg/l		8021/80	09/02/10	1
Toluene	0.00071	0.00021	0.0050	mg/l	J	8021/80	09/02/10	1
Ethylbenzene	0.0019	0.00021	0.00050	mg/l		8021/80	09/02/10	1
Total Xylene	0.016	0.00043	0.0015	mg/l		8021/80	09/02/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	09/02/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	95.5			% Rec.		8021/80	09/02/10	1
a,a,a-Trifluorotoluene(PID)	103.			% Rec.		8021/80	09/02/10	1

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

Note:  
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

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

September 05, 2010

Date Received : September 01, 2010  
 Description : 605-01  
 Sample ID : 44 LOWER PIT 0-6IN  
 Collected By : Brett Kennedy  
 Collection Date : 08/30/10 09:42

ESC Sample # : L476578-03

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.00059	0.00013	0.00050	mg/l		8021/80	09/02/10	1
Toluene	U	0.00021	0.0050	mg/l		8021/80	09/02/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	09/02/10	1
Total Xylene	0.00096	0.00043	0.0015	mg/l	J	8021/80	09/02/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	09/02/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	98.7			% Rec.		8021/80	09/02/10	1
a,a,a-Trifluorotoluene(PID)	103.			% Rec.		8021/80	09/02/10	1

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

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

September 05, 2010

Date Received : September 01, 2010  
 Description : 605-01  
 Sample ID : 43 DOWNSTREAM 0-6IN  
 Collected By : Brett Kennedy  
 Collection Date : 08/30/10 09:48

ESC Sample # : L476578-04

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.00013	0.00050	mg/l		8021/80	09/02/10	1
Toluene	U	0.00021	0.0050	mg/l		8021/80	09/02/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	09/02/10	1
Total Xylene	U	0.00043	0.0015	mg/l		8021/80	09/02/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	09/02/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	116.			% Rec.		8021/80	09/02/10	1
a,a,a-Trifluorotoluene(PID)	98.5			% Rec.		8021/80	09/02/10	1

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

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Reported: 09/05/10 18:53 Printed: 09/05/10 18:53

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L476578-01	WG496414	SAMP	Toluene	R1359850	J
L476578-02	WG496414	SAMP	Toluene	R1359850	J
L476578-03	WG496414	SAMP	Total Xylene	R1359850	J

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

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  
09/05/10 at 18:53:57

TSR Signing Reports: 134  
R4 - Rush: Three Day

Sample: L476578-01 Account: OXYGJCO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/05/10 18:53

Sample: L476578-02 Account: OXYGJCO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/05/10 18:53

Sample: L476578-03 Account: OXYGJCO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/05/10 18:53

Sample: L476578-04 Account: OXYGJCO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/05/10 18:53

Company Name/Address:  
**OXY USA - Grand Junction, CO**  
 WTP LP  
 760 Horizon Dr., Ste. 101  
 Grand Junction, CO 81506

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody  
 Page 1 of 1  
 Prepared by:  
 **ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (615) 758-5858  
 Phone (800) 767-5859  
 FAX (615) 758-5859  
**A175**

Report to: Brett Kennedy

Email to: brett.kennedy

Project Description: 605-01

City/State Collected: —

Phone: (970) 263-3601  
 FAX: —

Client Project #: —

ESC Key: —

Collected by: Brett Kennedy

Site/Facility ID#: —

P.O.#: —

Collected by (signature):  
Brett Kennedy  
 Immediately Packed on Ice N — Y ✓

**Rush?** (Lab MUST Be Notified)  
 Same Day . . . . . 200%  
 Next Day . . . . . 100%  
 Two Day . . . . . 50%  
 Three Day . . . . . 25%

Date Results Needed:  
 Email?  No  Yes  
 FAX?  No  Yes

No. of Cntrs

BTEX/BRO

CoCode: **OXYGJCO** (lab use only)  
 Template/Prelogin  
 Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs
#42 South Spring	grab	SW	0-6"	9/30/10	1230	2 ✓
#40 North Spring	↓	↓	↓	↓	1225	2 ✓
#44 Lower Pit	↓	↓	↓	↓	1236	2 ✓
#43 Downstream	↓	↓	↓	↓	1245	2 ✓

Remarks/Contaminant	Sample # (lab only)
L481957	01
	02
	03
	04

\*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other SW

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

sucker water  
864517895782

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by (Signature): <u>Brett Kennedy</u>	Date: <u>10/10/10</u>	Time: <u>0815</u>	Received by (Signature): <u>[Signature]</u>	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: (lab use only) <u>OK</u>
Relinquished by (Signature): <u>[Signature]</u>	Date: _____	Time: _____	Received by (Signature): <u>[Signature]</u>	Temp: <u>3.2</u>	Bottles Received: <u>8 ✓</u>
Relinquished by (Signature): <u>[Signature]</u>	Date: _____	Time: _____	Received for lab by (Signature): <u>[Signature]</u>	Date: <u>10/2/10</u>	Time: <u>0900</u>
					pH Checked: _____ NCF: _____



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

### Report Summary

Monday October 04, 2010

Report Number: L481957

Samples Received: 10/02/10

Client Project:

Description: 605-01

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:

Craig Cothron , 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

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

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

October 04, 2010

Date Received : October 02, 2010  
 Description : 605-01

ESC Sample # : L481957-01

Sample ID : 42 SOUTH SPRING 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 09/30/10 12:30

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.046	0.00013	0.00050	mg/l		8021/80	10/03/10	1
Toluene	0.00052	0.00021	0.0050	mg/l	J	8021/80	10/03/10	1
Ethylbenzene	0.014	0.00021	0.00050	mg/l		8021/80	10/03/10	1
Total Xylene	0.21	0.00043	0.0015	mg/l		8021/80	10/03/10	1
TPH (GC/FID) Low Fraction	1.1	0.040	0.10	mg/l		GRO	10/03/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	94.8			% Rec.		8021/80	10/03/10	1
a,a,a-Trifluorotoluene(PID)	99.7			% Rec.		8021/80	10/03/10	1

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

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Reported: 10/04/10 15:42 Printed: 10/04/10 15:43



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REPORT OF ANALYSIS

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

October 04, 2010

Date Received : October 02, 2010  
 Description : 605-01

ESC Sample # : L481957-02

Sample ID : 40 NORTH SPRING 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 09/30/10 12:25

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.0029	0.00013	0.00050	mg/l		8021/80	10/03/10	1
Toluene	0.00059	0.00021	0.0050	mg/l	J	8021/80	10/03/10	1
Ethylbenzene	0.00097	0.00021	0.00050	mg/l		8021/80	10/03/10	1
Total Xylene	0.010	0.00043	0.0015	mg/l		8021/80	10/03/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	10/03/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	96.3			% Rec.		8021/80	10/03/10	1
a,a,a-Trifluorotoluene(PID)	101.			% Rec.		8021/80	10/03/10	1

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 MDL = Minimum Detection Limit = LOD  
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Reported: 10/04/10 15:42 Printed: 10/04/10 15:43



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REPORT OF ANALYSIS

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

October 04, 2010

Date Received : October 02, 2010  
 Description : 605-01  
 Sample ID : 44 LOWER PIT 0-6 IN  
 Collected By : Brett Kennedy  
 Collection Date : 09/30/10 12:36

ESC Sample # : L481957-03  
 Site ID :  
 Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.00013	0.00050	mg/l		8021/80	10/03/10	1
Toluene	U	0.00021	0.0050	mg/l		8021/80	10/03/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	10/03/10	1
Total Xylene	U	0.00043	0.0015	mg/l		8021/80	10/03/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	10/03/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	98.6			% Rec.		8021/80	10/03/10	1
a,a,a-Trifluorotoluene(PID)	102.			% Rec.		8021/80	10/03/10	1

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REPORT OF ANALYSIS

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

October 04, 2010

Date Received : October 02, 2010  
 Description : 605-01

ESC Sample # : L481957-04

Sample ID : 43 DOWNSTREAM 0-6 IN

Site ID :

Collected By : Brett Kennedy  
 Collection Date : 09/30/10 12:45

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.00013	0.00050	mg/l		8021/80	10/03/10	1
Toluene	U	0.00021	0.00050	mg/l		8021/80	10/03/10	1
Ethylbenzene	U	0.00021	0.00050	mg/l		8021/80	10/03/10	1
Total Xylene	U	0.00043	0.0015	mg/l		8021/80	10/03/10	1
TPH (GC/FID) Low Fraction	U	0.040	0.10	mg/l		GRO	10/03/10	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	98.6			% Rec.		8021/80	10/03/10	1
a,a,a-Trifluorotoluene(PID)	102.			% Rec.		8021/80	10/03/10	1

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L481957-01	WG501335	SAMP	Toluene	R1407949	J
L481957-02	WG501335	SAMP	Toluene	R1407949	J

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

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  
10/04/10 at 15:43:09

TSR Signing Reports: 134  
R4 - Rush: Three Day

Sample: L481957-01 Account: OXYGJCO Received: 10/02/10 09:00 Due Date: 10/06/10 00:00 RPT Date: 10/04/10 15:42  
Sample: L481957-02 Account: OXYGJCO Received: 10/02/10 09:00 Due Date: 10/06/10 00:00 RPT Date: 10/04/10 15:42  
Sample: L481957-03 Account: OXYGJCO Received: 10/02/10 09:00 Due Date: 10/06/10 00:00 RPT Date: 10/04/10 15:42  
Sample: L481957-04 Account: OXYGJCO Received: 10/02/10 09:00 Due Date: 10/06/10 00:00 RPT Date: 10/04/10 15:42