



PROJECT NO:	012-1538
DRAWN BY:	KJG
DATE:	5/10/13

Landfarm Sampling Diagram  
**Location: MV 25-17**  
 WPX Energy Rocky Mountain, LLC



760 Horizon Drive, Suite 102  
 Grand Junction, CO 81506  
 TEL 970.263.7800  
 FAX 970.263.7456

FIGURE

1





05/24/13

## Technical Report for

**WPX Energy Rocky Mountain, LLC**

**CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline**

**NXEEPPARACH**

**Accutest Job Number: D46463**

**Sampling Date: 05/21/13**

### Report to:

**Olsson Associates  
760 Horizon Drive Suite 102  
Grand Junction, CO 81505  
tdobransky@oaconsulting.com; karolina.blaney@wpxenergy.com  
ATTN: Tim Dobransky**

**Total number of pages in report: 34**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

**Scott Heideman  
Laboratory Director**

**Client Service contact: Renea Jackson 303-425-6021**

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Summary of Hits .....</b>	<b>6</b>
<b>Section 4: Sample Results .....</b>	<b>7</b>
<b>4.1:</b> D46463-1: MV 25-17 LF 1-2 (0-24IN.) .....	8
<b>4.2:</b> D46463-2: MV 25-17 LF 1-3 (0-24IN.) .....	12
<b>Section 5: Misc. Forms .....</b>	<b>16</b>
<b>5.1:</b> Chain of Custody .....	17
<b>Section 6: GC/MS Volatiles - QC Data Summaries .....</b>	<b>19</b>
<b>6.1:</b> Method Blank Summary .....	20
<b>6.2:</b> Blank Spike Summary .....	21
<b>6.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	22
<b>Section 7: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>23</b>
<b>7.1:</b> Method Blank Summary .....	24
<b>7.2:</b> Blank Spike Summary .....	25
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	26
<b>Section 8: GC Volatiles - QC Data Summaries .....</b>	<b>27</b>
<b>8.1:</b> Method Blank Summary .....	28
<b>8.2:</b> Blank Spike Summary .....	29
<b>8.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	30
<b>Section 9: GC Semi-volatiles - QC Data Summaries .....</b>	<b>31</b>
<b>9.1:</b> Method Blank Summary .....	32
<b>9.2:</b> Blank Spike Summary .....	33
<b>9.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	34



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D46463

CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline  
Project No: NXEEPPARACH

Sample Number	Collected		Received	Matrix		Client
	Date	Time By		Code	Type	
D46463-1	05/21/13	18:20 JS	05/23/13	SO	Soil	MV 25-17 LF 1-2 (0-24IN.)
D46463-2	05/21/13	18:30 JS	05/23/13	SO	Soil	MV 25-17 LF 1-3 (0-24IN.)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** WPX Energy Rocky Mountain, LLC

**Job No** D46463

**Site:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

**Report Date** 5/24/2013 4:21:31 PM

On 05/23/2013, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D46463 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> SO	<b>Batch ID:</b> V5V1650
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46457-1MS, D46457-1MSD were used as the QC samples indicated.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP7900
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46457-1MS, D46457-1MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGB1126
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46462-1MS, D46462-1MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP7903
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46462-1MS, D46462-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

<b>Matrix</b> SO	<b>Batch ID:</b> GN20316
------------------	--------------------------

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Summary of Hits

Page 1 of 1

**Job Number:** D46463  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline  
**Collected:** 05/21/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

**D46463-1**      **MV 25-17 LF 1-2 (0-24IN.)**

Chrysene	7.4 J	9.5	4.9	ug/kg	SW846 8270C BY SIM
Naphthalene	12.6 J	13	12	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)	70.5	7.6	5.7	mg/kg	SW846-8015B

**D46463-2**      **MV 25-17 LF 1-3 (0-24IN.)**

TPH-DRO (C10-C28)	69.6	7.7	5.7	mg/kg	SW846-8015B
-------------------	------	-----	-----	-------	-------------

Sample Results

Report of Analysis



## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.6
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27122.D	1	05/23/13	BD	n/a	n/a	V5V1650
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	64	32	ug/kg	
108-88-3	Toluene	ND	130	64	ug/kg	
100-41-4	Ethylbenzene	ND	130	24	ug/kg	
1330-20-7	Xylene (total)	ND	250	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	97%		64-130%
460-00-4	4-Bromofluorobenzene	106%		62-131%
17060-07-0	1,2-Dichloroethane-D4	105%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.6
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G14777.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	9.5	4.9	ug/kg	
120-12-7	Anthracene	ND	9.5	4.9	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.5	4.9	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.5	4.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.5	4.9	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.5	4.9	ug/kg	
218-01-9	Chrysene	7.4	9.5	4.9	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	9.5	4.9	ug/kg	
206-44-0	Fluoranthene	ND	9.5	4.9	ug/kg	
86-73-7	Fluorene	ND	9.5	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.5	4.9	ug/kg	
91-20-3	Naphthalene	12.6	13	12	ug/kg	J
129-00-0	Pyrene	ND	9.5	4.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	92%		10-159%
321-60-8	2-Fluorobiphenyl	90%		19-131%
1718-51-0	Terphenyl-d14	91%		18-150%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.6
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20542.D	1	05/23/13	BD	n/a	n/a	GGB1126
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.6
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD24743.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	70.5	7.6	5.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	80%		35-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-3 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-2	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	86.8
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27123.D	1	05/23/13	BD	n/a	n/a	V5V1650
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.06 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	65	32	ug/kg	
108-88-3	Toluene	ND	130	65	ug/kg	
100-41-4	Ethylbenzene	ND	130	25	ug/kg	
1330-20-7	Xylene (total)	ND	260	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	97%		64-130%
460-00-4	4-Bromofluorobenzene	110%		62-131%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-3 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-2	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	86.8
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G14778.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

## COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	9.6	5.0	ug/kg	
120-12-7	Anthracene	ND	9.6	5.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.6	5.0	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.6	5.0	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.6	5.0	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.6	5.0	ug/kg	
218-01-9	Chrysene	ND	9.6	5.0	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.6	5.0	ug/kg	
206-44-0	Fluoranthene	ND	9.6	5.0	ug/kg	
86-73-7	Fluorene	ND	9.6	5.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.6	5.0	ug/kg	
91-20-3	Naphthalene	ND	13	12	ug/kg	
129-00-0	Pyrene	ND	9.6	5.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	89%		10-159%
321-60-8	2-Fluorobiphenyl	77%		19-131%
1718-51-0	Terphenyl-d14	97%		18-150%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 1-3 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-2	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	86.8
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20543.D	1	05/23/13	BD	n/a	n/a	GGB1126
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-3 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46463-2	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	86.8
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD24744.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	69.6	7.7	5.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	84%		35-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

5

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



## WPX CHAIN OF CUSTODY

PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, CO 80033  
TEL: 303-425-6021 FAX: 303-425-6854  
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <b>D46463</b>
Client / Reporting Information	
Company Name: <b>Olsson Associates</b>	
Street Address: <b>760 Horizon Drive, STE 102</b>	
City: <b>Grand Junction, CO 81506</b>	
Project Contact: <b>Tim Dobransky</b> Email: <b>tdobransky@olssonassociates.com</b>	
Phone #: <b>970-263-7800</b>	
Sampler(s) Name(s): <b>J. Sutrina</b>	
Project Name: <b>CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline</b>	
Street: _____	
City: _____ State: _____	
Billing Information (If different from Report to)	
Company Name: <b>WPX Energy Rocky Mountain, LLC (WILLCOP)</b>	
Street Address: <b>1058 County Road 215</b>	
City: <b>Parachute, CO 81635</b>	
Attention: <b>Leo Braun</b>	
Email Invoices: <b>Leo.Braun@wpxenergy.com</b>	
Client Purchase Order #: <b>NXEEPPARACH</b>	
Project Manager: _____	
Collection	
MEOHDI Vial # _____	
Date: <b>5/21/13</b> Time: <b>1420</b>	
Sampled by: <b>JS</b> Matrix: <b>SO</b> # of bottles: <b>1</b>	
Number of preserved bottles	
ROH _____ HNO3 _____ H2SO4 _____ NONE _____ DI Water _____ MEOH _____ ENCORE _____	
Requested Analysis (see TEST CODE sheet)	
GRODRO _____ BTEX _____ PAH (COGCC Table 910 List) _____	
Matrix Codes	
Water _____ GW - Ground Water _____ WW - Water _____ SW - Surface Water _____ SO - Soil _____ SL - Sludge _____ SED - Sediment _____ OI - Oil _____ LIQ - Other Liquid _____ AIR - Air _____ SOL - Other Solid _____ WIP - Wipe _____ FB - Field Blank _____ EB - Equipment Blank _____ RB - Rinse Blank _____ TB - Tap Water _____	
LAB USE ONLY	
Field ID / Point of Collection	
MV 25-17 LF 1-2 (0-24 in.)	
MV 25-17 LF 1-3 (0-24 in.)	
Turnaround Time (Business days)	
Approved By (Accutest PM): / Date: <b>JGM 12/8/12</b>	
Commercial "A" (Level 1) _____ Commercial "B" (Level 2) _____ COMMBN _____ COMMBN+ _____	
State Forms Required _____ Send Forms to State _____ Report by Fax _____ Report by PDF _____ EDD Format _____	
Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC Summary (+ chromatograms)	
Also email final report to: <b>Karolina.Bianey@wpxenergy.com</b>	
PLEASE RUSH 24 HR TAT	
Sample Custody must be documented below each time samples change possession, including courier delivery.	
Relinquished by Sampler: <b>1</b> Date Time: <b>5/22/13 10:05</b> Received By: <b>1 Jacob Darter</b> Date Time: <b>5/21/13 10:15</b>	
Relinquished by Sampler: <b>3</b> Date Time: _____ Received By: <b>3</b> Date Time: _____	
Relinquished by: <b>5</b> Date Time: _____ Received By: <b>5</b> Date Time: _____	
Custody Seal # <b>FX</b> Intact _____ Not Intact _____ Preserved where applicable _____ On Ice _____ Cooler Temp. <b>3.4</b>	

D46463: Chain of Custody

Page 1 of 2



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D46463

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 5/23/2013 10:15:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25-17 LANDFARM 1 BATCH BASELINE

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories  
V:(303) 425-6021

4036 Youngfield Street  
F: (303) 425-6854

Wheat Ridge, CO  
www.accutest.com

## GC/MS Volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D46463

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1650-MB	5V27111.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46463-1, D46463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	97% 64-130%
460-00-4	4-Bromofluorobenzene	105% 62-131%
17060-07-0	1,2-Dichloroethane-D4	100% 70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D46463

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1650-BS	5V27112.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46463-1, D46463-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2560	102	70-130
100-41-4	Ethylbenzene	2500	2680	107	70-130
108-88-3	Toluene	2500	2610	104	70-130
1330-20-7	Xylene (total)	7500	8060	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	103%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D46463

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46457-1MS	5V27114.D	1	05/23/13	BD	n/a	n/a	V5V1650
D46457-1MSD	5V27115.D	1	05/23/13	BD	n/a	n/a	V5V1650
D46457-1	5V27113.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46463-1, D46463-2

CAS No.	Compound	D46457-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3390	3510	104	3530	104	1	64-139/30
100-41-4	Ethylbenzene	ND		3390	3480	103	3450	102	1	68-136/30
108-88-3	Toluene	ND		3390	3390	100	3370	99	1	60-130/30
1330-20-7	Xylene (total)	ND		10200	10600	104	10700	105	1	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D46457-1	Limits
2037-26-5	Toluene-D8	97%	98%	97%	64-130%
460-00-4	4-Bromofluorobenzene	105%	110%	103%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	96%	97%	70-130%

\* = Outside of Control Limits.



## GC/MS Semi-volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D46463

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-MB	3G14760.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46463-1, D46463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.3	4.3	ug/kg	
120-12-7	Anthracene	ND	8.3	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.3	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.3	4.3	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.3	4.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.3	4.3	ug/kg	
218-01-9	Chrysene	ND	8.3	4.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	8.3	4.3	ug/kg	
206-44-0	Fluoranthene	ND	8.3	4.3	ug/kg	
86-73-7	Fluorene	ND	8.3	5.0	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.3	4.3	ug/kg	
91-20-3	Naphthalene	ND	12	10	ug/kg	
129-00-0	Pyrene	ND	8.3	4.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	95% 10-159%
321-60-8	2-Fluorobiphenyl	88% 19-131%
1718-51-0	Terphenyl-d14	111% 18-150%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D46463  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-BS	3G14761.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46463-1, D46463-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	69.8	84	68-130
120-12-7	Anthracene	83.3	78.1	94	67-130
56-55-3	Benzo(a)anthracene	83.3	84.0	101	65-130
205-99-2	Benzo(b)fluoranthene	83.3	82.5	99	44-130
207-08-9	Benzo(k)fluoranthene	83.3	76.1	91	56-131
50-32-8	Benzo(a)pyrene	83.3	74.0	89	62-130
218-01-9	Chrysene	83.3	85.3	102	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	69.2	83	55-130
206-44-0	Fluoranthene	83.3	80.0	96	70-130
86-73-7	Fluorene	83.3	69.8	84	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	72.5	87	56-130
91-20-3	Naphthalene	83.3	60.1	72	70-130
129-00-0	Pyrene	83.3	81.1	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	95%	10-159%
321-60-8	2-Fluorobiphenyl	88%	19-131%
1718-51-0	Terphenyl-d14	100%	18-150%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D46463  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-MS	3G14763.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
OP7900-MSD	3G14764.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
D46457-1	3G14762.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46463-1, D46463-2

CAS No.	Compound	D46457-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		98.7	74.5	75	83.2	84	11	25-151/30
120-12-7	Anthracene	ND		98.7	90.1	91	102	103	12	39-159/30
56-55-3	Benzo(a)anthracene	ND		98.7	104	105	113	115	8	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		98.7	131	133	140	142	7	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		98.7	64.3	65	70.6	72	9	10-188/30
50-32-8	Benzo(a)pyrene	ND		98.7	81.9	83	89.2	90	9	32-144/30
218-01-9	Chrysene	ND		98.7	88.5	90	96.5	98	9	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		98.7	80.7	82	90.3	92	11	21-152/30
206-44-0	Fluoranthene	ND		98.7	93.9	95	101	102	7	36-157/30
86-73-7	Fluorene	ND		98.7	86.4	88	95.9	97	10	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		98.7	80.1	81	89.3	91	11	20-154/30
91-20-3	Naphthalene	60.3		98.7	166	107	174	115	5	10-163/30
129-00-0	Pyrene	5.5	J	98.7	106	102	120	116	12	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D46457-1	Limits
4165-60-0	Nitrobenzene-d5	75%	84%	74%	10-159%
321-60-8	2-Fluorobiphenyl	67%	77%	76%	19-131%
1718-51-0	Terphenyl-d14	75%	87%	70%	18-150%

\* = Outside of Control Limits.

## GC Volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1126-MB	GB20532.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples: Method: SW846 8015B

D46463-1, D46463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	91% 60-140%

Blank Spike Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1126-BS	GB20533.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples: Method: SW846 8015B

D46463-1, D46463-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	113	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46462-1MS	GB20535.D	1	05/23/13	BD	n/a	n/a	GGB1126
D46462-1MSD	GB20536.D	1	05/23/13	BD	n/a	n/a	GGB1126
D46462-1	GB20534.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples: Method: SW846 8015B

D46463-1, D46463-2

CAS No.	Compound	D46462-1 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	146	148	101	146	100	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D46462-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	98%	88%	60-140%

\* = Outside of Control Limits.

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-MB	FD24733.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B  
D46463-1, D46463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	76% 35-130%

Blank Spike Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-BS	FD24734.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B

D46463-1, D46463-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	523	78	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	76%	35-130%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46463  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-MS	FD24735.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
OP7903-MSD	FD24736.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
D46462-1	FD24737.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B

D46463-1, D46463-2

CAS No.	Compound	D46462-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	7.18	J	776	639	81	595	76	7	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D46462-1	Limits
84-15-1	o-Terphenyl	78%	68%	72%	35-130%

\* = Outside of Control Limits.



05/24/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

NXEEPPARACH

Accutest Job Number: D46464

Sampling Date: 05/21/13

Report to:

Olsson Associates  
760 Horizon Drive Suite 102  
Grand Junction, CO 81505  
tdobransky@oaconsulting.com; karolina.blaney@wpxenergy.com  
ATTN: Tim Dobransky

Total number of pages in report: 30



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman  
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.



# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Summary of Hits .....</b>	<b>6</b>
<b>Section 4: Sample Results .....</b>	<b>7</b>
<b>4.1: D46464-1: MV 25-17 LF 2-12 (0-24IN.) .....</b>	<b>8</b>
<b>Section 5: Misc. Forms .....</b>	<b>12</b>
<b>5.1: Chain of Custody .....</b>	<b>13</b>
<b>Section 6: GC/MS Volatiles - QC Data Summaries .....</b>	<b>15</b>
<b>6.1: Method Blank Summary .....</b>	<b>16</b>
<b>6.2: Blank Spike Summary .....</b>	<b>17</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>18</b>
<b>Section 7: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>19</b>
<b>7.1: Method Blank Summary .....</b>	<b>20</b>
<b>7.2: Blank Spike Summary .....</b>	<b>21</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>22</b>
<b>Section 8: GC Volatiles - QC Data Summaries .....</b>	<b>23</b>
<b>8.1: Method Blank Summary .....</b>	<b>24</b>
<b>8.2: Blank Spike Summary .....</b>	<b>25</b>
<b>8.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>26</b>
<b>Section 9: GC Semi-volatiles - QC Data Summaries .....</b>	<b>27</b>
<b>9.1: Method Blank Summary .....</b>	<b>28</b>
<b>9.2: Blank Spike Summary .....</b>	<b>29</b>
<b>9.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>30</b>



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D46464

CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline  
Project No: NXEEPPARACH

Sample Number	Collected			Matrix			Client Sample ID
	Date	Time	By	Received	Code	Type	
D46464-1	05/21/13	18:40	JS	05/23/13	SO	Soil	MV 25-17 LF 2-12 (0-24IN.)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** WPX Energy Rocky Mountain, LLC

**Job No** D46464

**Site:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

**Report Date** 5/24/2013 4:22:10 PM

On 05/23/2013, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D46464 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> SO	<b>Batch ID:</b> V5V1650
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46457-1MS, D46457-1MSD were used as the QC samples indicated.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP7900
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46457-1MS, D46457-1MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGB1126
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46462-1MS, D46462-1MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP7903
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46462-1MS, D46462-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

<b>Matrix</b> SO	<b>Batch ID:</b> GN20316
------------------	--------------------------

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D46464  
Account: WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline  
Collected: 05/21/13



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
D46464-1	MV 25-17 LF 2-12 (0-24IN.)					
TPH-GRO (C6-C10)		12.8 J	13	6.4	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		77.6	7.6	5.7	mg/kg	SW846-8015B

Sample Results

Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 2-12 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46464-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.8
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27124.D	1	05/23/13	BD	n/a	n/a	V5V1650
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.03 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	64	32	ug/kg	
108-88-3	Toluene	ND	130	64	ug/kg	
100-41-4	Ethylbenzene	ND	130	24	ug/kg	
1330-20-7	Xylene (total)	ND	250	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	98%		64-130%
460-00-4	4-Bromofluorobenzene	111%		62-131%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 2-12 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46464-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.8
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G14779.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

## COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	9.4	4.9	ug/kg	
120-12-7	Anthracene	ND	9.4	4.9	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.4	4.9	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.4	4.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.4	4.9	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.4	4.9	ug/kg	
218-01-9	Chrysene	ND	9.4	4.9	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.4	4.9	ug/kg	
206-44-0	Fluoranthene	ND	9.4	4.9	ug/kg	
86-73-7	Fluorene	ND	9.4	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.4	4.9	ug/kg	
91-20-3	Naphthalene	ND	13	12	ug/kg	
129-00-0	Pyrene	ND	9.4	4.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	85%		10-159%
321-60-8	2-Fluorobiphenyl	85%		19-131%
1718-51-0	Terphenyl-d14	94%		18-150%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 2-12 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46464-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.8
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20544.D	1	05/23/13	BD	n/a	n/a	GGB1126
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	12.8	13	6.4	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	87%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 2-12 (0-24IN.)	<b>Date Sampled:</b>	05/21/13
<b>Lab Sample ID:</b>	D46464-1	<b>Date Received:</b>	05/23/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.8
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD24745.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	77.6	7.6	5.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	71%		35-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

5

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



## WPX CHAIN OF CUSTODY

PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, CO 80033  
TEL: 303-425-6021 FAX: 303-425-6854  
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # <b>D46464</b>	
Client / Reporting Information		Project Information	
Company Name <b>Oisson Associates</b>		Project Name: <b>CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline</b>	
Street Address <b>760 Horizon Drive, STE 102</b>		Street	
City <b>Grand Junction, CO 81506</b>		City State	
Project Contact Email <b>Tim Dobransky tdobransky@oissonassociates.c</b>		Billing Information (if different from Report to) Company Name <b>WPX Energy Rocky Mountain, LLC (WILLCOP)</b>	
Phone # <b>970-263-7800</b>		Street Address <b>1058 County Road 215</b>	
Sampler(s) Name(s) <b>J Sutrina</b>		Client Purchase Order # <b>NXEEPPARACH</b>	
		City <b>Parachute, CO 81635</b>	
		Project Manager <b>Leo Braun</b>	
		Attention: <b>Leo Braun</b>	
		Email Invoices: <b>Leo.Braun@wpxenergy.com</b>	
Turnaround Time (Business days)		Date Deliverable Information	
Comments / Special Instructions			
Approved By (Accutest PM): / Date: <b>JGM 12/8/12</b>		Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> COMMBN <input type="checkbox"/> COMMBN+ <input type="checkbox"/> Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC Narrative (+/- chromatograms)	
Emergency & Rush TIA data available VIA Lablink		State Forms Required <input type="checkbox"/> Send Forms to State <input type="checkbox"/> Report by Fax <input checked="" type="checkbox"/> Report by PDF <input type="checkbox"/> EDD Format	
Also email final report to: <b>Karolina.Blaney@wpxenergy.com</b>		PLEASE RUSH 24 HR TAT	
Relinquished by Sampler:		Relinquished By:	
Date Time: <b>5/23/13 11:00</b>		Date Time:	
Received By: <b>1 Jacob Braun 5/23/13 12:15</b>		Received By: <b>2</b>	
Relinquished by Sampler:		Relinquished By:	
Date Time:		Date Time:	
Received By: <b>3</b>		Received By: <b>4</b>	
Relinquished by:		Relinquished By:	
Date Time:		Date Time:	
Received By: <b>5</b>		Received By:	
Custody Seal # <b>FX</b>		Preserved where applicable <input checked="" type="checkbox"/>	
On Ice <input checked="" type="checkbox"/>		Cooler Temp. <b>3.4</b>	

D46464: Chain of Custody

Page 1 of 2

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D46464

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 5/23/2013 10:15:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25-17 LANDFARM 2 BARCH 1 BASELINE

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories  
V:(303) 425-6021

4036 Youngfield Street  
F: (303) 425-6854

Wheat Ridge, CO  
www.accutest.com

## GC/MS Volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1650-MB	5V27111.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46464-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	97% 64-130%
460-00-4	4-Bromofluorobenzene	105% 62-131%
17060-07-0	1,2-Dichloroethane-D4	100% 70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1650-BS	5V27112.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46464-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2560	102	70-130
100-41-4	Ethylbenzene	2500	2680	107	70-130
108-88-3	Toluene	2500	2610	104	70-130
1330-20-7	Xylene (total)	7500	8060	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	103%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46457-1MS	5V27114.D	1	05/23/13	BD	n/a	n/a	V5V1650
D46457-1MSD	5V27115.D	1	05/23/13	BD	n/a	n/a	V5V1650
D46457-1	5V27113.D	1	05/23/13	BD	n/a	n/a	V5V1650

The QC reported here applies to the following samples:

Method: SW846 8260B

D46464-1

CAS No.	Compound	D46457-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3390	3510	104	3530	104	1	64-139/30
100-41-4	Ethylbenzene	ND		3390	3480	103	3450	102	1	68-136/30
108-88-3	Toluene	ND		3390	3390	100	3370	99	1	60-130/30
1330-20-7	Xylene (total)	ND		10200	10600	104	10700	105	1	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D46457-1	Limits
2037-26-5	Toluene-D8	97%	98%	97%	64-130%
460-00-4	4-Bromofluorobenzene	105%	110%	103%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	96%	97%	70-130%

\* = Outside of Control Limits.

## GC/MS Semi-volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-MB	3G14760.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46464-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.3	4.3	ug/kg	
120-12-7	Anthracene	ND	8.3	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.3	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.3	4.3	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.3	4.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.3	4.3	ug/kg	
218-01-9	Chrysene	ND	8.3	4.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	8.3	4.3	ug/kg	
206-44-0	Fluoranthene	ND	8.3	4.3	ug/kg	
86-73-7	Fluorene	ND	8.3	5.0	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.3	4.3	ug/kg	
91-20-3	Naphthalene	ND	12	10	ug/kg	
129-00-0	Pyrene	ND	8.3	4.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	95% 10-159%
321-60-8	2-Fluorobiphenyl	88% 19-131%
1718-51-0	Terphenyl-d14	111% 18-150%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-BS	3G14761.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46464-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	69.8	84	68-130
120-12-7	Anthracene	83.3	78.1	94	67-130
56-55-3	Benzo(a)anthracene	83.3	84.0	101	65-130
205-99-2	Benzo(b)fluoranthene	83.3	82.5	99	44-130
207-08-9	Benzo(k)fluoranthene	83.3	76.1	91	56-131
50-32-8	Benzo(a)pyrene	83.3	74.0	89	62-130
218-01-9	Chrysene	83.3	85.3	102	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	69.2	83	55-130
206-44-0	Fluoranthene	83.3	80.0	96	70-130
86-73-7	Fluorene	83.3	69.8	84	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	72.5	87	56-130
91-20-3	Naphthalene	83.3	60.1	72	70-130
129-00-0	Pyrene	83.3	81.1	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	95%	10-159%
321-60-8	2-Fluorobiphenyl	88%	19-131%
1718-51-0	Terphenyl-d14	100%	18-150%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D46464  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7900-MS	3G14763.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
OP7900-MSD	3G14764.D	1	05/23/13	DC	05/23/13	OP7900	E3G721
D46457-1	3G14762.D	1	05/23/13	DC	05/23/13	OP7900	E3G721

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46464-1

CAS No.	Compound	D46457-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		98.7	74.5	75	83.2	84	11	25-151/30
120-12-7	Anthracene	ND		98.7	90.1	91	102	103	12	39-159/30
56-55-3	Benzo(a)anthracene	ND		98.7	104	105	113	115	8	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		98.7	131	133	140	142	7	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		98.7	64.3	65	70.6	72	9	10-188/30
50-32-8	Benzo(a)pyrene	ND		98.7	81.9	83	89.2	90	9	32-144/30
218-01-9	Chrysene	ND		98.7	88.5	90	96.5	98	9	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		98.7	80.7	82	90.3	92	11	21-152/30
206-44-0	Fluoranthene	ND		98.7	93.9	95	101	102	7	36-157/30
86-73-7	Fluorene	ND		98.7	86.4	88	95.9	97	10	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		98.7	80.1	81	89.3	91	11	20-154/30
91-20-3	Naphthalene	60.3		98.7	166	107	174	115	5	10-163/30
129-00-0	Pyrene	5.5	J	98.7	106	102	120	116	12	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D46457-1	Limits
4165-60-0	Nitrobenzene-d5	75%	84%	74%	10-159%
321-60-8	2-Fluorobiphenyl	67%	77%	76%	19-131%
1718-51-0	Terphenyl-d14	75%	87%	70%	18-150%

\* = Outside of Control Limits.

## GC Volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D46464  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1126-MB	GB20532.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples: Method: SW846 8015B

D46464-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	91% 60-140%

Blank Spike Summary

Job Number: D46464  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1126-BS	GB20533.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples: Method: SW846 8015B

D46464-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	113	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D46464

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46462-1MS	GB20535.D	1	05/23/13	BD	n/a	n/a	GGB1126
D46462-1MSD	GB20536.D	1	05/23/13	BD	n/a	n/a	GGB1126
D46462-1	GB20534.D	1	05/23/13	BD	n/a	n/a	GGB1126

The QC reported here applies to the following samples:

Method: SW846 8015B

D46464-1

CAS No.	Compound	D46462-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		146	148	101	146	100	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D46462-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	98%	88%	60-140%

\* = Outside of Control Limits.

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D46464  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-MB	FD24733.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B

D46464-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	76% 35-130%

Blank Spike Summary

Job Number: D46464  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-BS	FD24734.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B

D46464-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	523	78	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	76%	35-130%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46464  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 1 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7903-MS	FD24735.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
OP7903-MSD	FD24736.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234
D46462-1	FD24737.D	1	05/23/13	TU	05/23/13	OP7903	GFD1234

The QC reported here applies to the following samples: Method: SW846-8015B

D46464-1

CAS No.	Compound	D46462-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	7.18	J	776	639	81	595	76	7	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D46462-1	Limits
84-15-1	o-Terphenyl	78%	68%	72%	35-130%

\* = Outside of Control Limits.