



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

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

**OLSSON**  
 ASSOCIATES

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FIGURE  
 1





07/31/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

NXEEPPARACH

Accutest Job Number: D48702

Sampling Date: 07/29/13

Report to:

Williams Production

karolina.blaney@wpxenergy.com

ATTN: Karolina Blaney

Total number of pages in report: **36**



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)

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Test results relate only to samples analyzed.

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D48702

CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline  
Project No: NXEEPPARACH

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D48702-1	07/29/13	16:30	JS	07/30/13	SO	Soil	MV 25-17 LF 1-2 (0-24")
D48702-2	07/29/13	16:35	JS	07/30/13	SO	Soil	MV 25-17 LF 1-4 (0-24")

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** D48702

**Site:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

**Report Date** 7/31/2013 4:24:53 PM

On 07/30/2013, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D48702 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> V5V1712
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48664-2MS, D48664-2MSD were used as the QC samples indicated.

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

<b>Matrix</b> SO	<b>Batch ID:</b> OP8285
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48703-1MS, D48703-1MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGB1176
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48675-1MS, D48675-1MSD were used as the QC samples indicated.

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

<b>Matrix</b> SO	<b>Batch ID:</b> OP8284
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48604-4MS, D48604-4MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM2540B-2011 M

<b>Matrix</b> SO	<b>Batch ID:</b> GN21246
------------------	--------------------------

- The data for SM2540B-2011 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

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**Job Number:** D48702  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline  
**Collected:** 07/29/13



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

### D48702-1 MV 25-17 LF 1-2 (0-24")

Fluorene	13.3	9.0	5.4	ug/kg	SW846 8270C BY SIM
Naphthalene	229	13	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	8.28 J	11	5.7	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	121	7.2	5.4	mg/kg	SW846-8015B

### D48702-2 MV 25-17 LF 1-4 (0-24")

Xylene (total)	266	240	120	ug/kg	SW846 8260B
Fluorene	10.3	9.2	5.5	ug/kg	SW846 8270C BY SIM
Naphthalene	227	13	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	12.3	12	6.0	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	132	7.4	5.5	mg/kg	SW846-8015B

Sample Results

Report of Analysis



## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	92.6
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V28354.D	1	07/30/13	BD	n/a	n/a	V5V1712
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	57	29	ug/kg	
108-88-3	Toluene	ND	110	57	ug/kg	
100-41-4	Ethylbenzene	ND	110	22	ug/kg	
1330-20-7	Xylene (total)	ND	230	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	92%		64-130%
460-00-4	4-Bromofluorobenzene	106%		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 1-2 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	92.6
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15665.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
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	9.0	4.7	ug/kg	
120-12-7	Anthracene	ND	9.0	4.7	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.0	4.7	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.0	4.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.0	4.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.0	4.7	ug/kg	
218-01-9	Chrysene	ND	9.0	4.7	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.0	4.7	ug/kg	
206-44-0	Fluoranthene	ND	9.0	4.7	ug/kg	
86-73-7	Fluorene	13.3	9.0	5.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.0	4.7	ug/kg	
91-20-3	Naphthalene	229	13	11	ug/kg	
129-00-0	Pyrene	ND	9.0	4.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	95%		10-159%
321-60-8	2-Fluorobiphenyl	86%		19-131%
1718-51-0	Terphenyl-d14	92%		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

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<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	92.6
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21420.D	1	07/30/13	EV	n/a	n/a	GGB1176
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)	8.28	11	5.7	mg/kg	J

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

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<b>Client Sample ID:</b>	MV 25-17 LF 1-2 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	92.6
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD27092.D	1	07/31/13	TU	07/30/13	OP8284	GFD1324
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)	121	7.2	5.4	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

## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 1-4 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V28355.D	1	07/30/13	BD	n/a	n/a	V5V1712
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	60	30	ug/kg	
108-88-3	Toluene	ND	120	60	ug/kg	
100-41-4	Ethylbenzene	ND	120	23	ug/kg	
1330-20-7	Xylene (total)	266	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	94%		64-130%
460-00-4	4-Bromofluorobenzene	109%		62-131%
17060-07-0	1,2-Dichloroethane-D4	99%		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 1-4 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15666.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
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	9.2	4.8	ug/kg	
120-12-7	Anthracene	ND	9.2	4.8	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.2	4.8	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.2	4.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.2	4.8	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.2	4.8	ug/kg	
218-01-9	Chrysene	ND	9.2	4.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.2	4.8	ug/kg	
206-44-0	Fluoranthene	ND	9.2	4.8	ug/kg	
86-73-7	Fluorene	10.3	9.2	5.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.2	4.8	ug/kg	
91-20-3	Naphthalene	227	13	11	ug/kg	
129-00-0	Pyrene	ND	9.2	4.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	94%		10-159%
321-60-8	2-Fluorobiphenyl	78%		19-131%
1718-51-0	Terphenyl-d14	85%		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

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<b>Client Sample ID:</b>	MV 25-17 LF 1-4 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21421.D	1	07/30/13	EV	n/a	n/a	GGB1176
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)	12.3	12	6.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	91%		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 1-4 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48702-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD27094.D	1	07/31/13	TU	07/30/13	OP8284	GFD1324
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)	132	7.4	5.5	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

## Misc. Forms

5

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

4036 Youngfield Street, Wheat Ridge, CO 80033  
TEL: 303-425-6021 FAX: 303-425-6854  
[www.acucutest.com](http://www.acucutest.com)

<b>ACCUTEST®</b> LABORATORIES		4036 Youngfield Street, Wheat Ridge, CO 80033 TEL: 303-425-6021 FAX: 303-425-6854 www.accutest.com		FED-EX Tracking # _____ Bottle Order Control # _____	
Client / Reporting Information		Project Information		Requested Analysis ( see TEST CODE sheet )	
Company Name <b>Olsson Associates</b> Street Address <b>780 Horizon Drive, STE 102</b> City _____ State _____ Zip _____ Project Contact Email <b>Tim Dobransky 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 6 Baseline</b> Street _____ City _____ State _____ Zip _____ Project # _____ Client Purchase Order # <b>NXEEPPARACH</b> Project Manager <b>NXEEPPARACH</b> Billing Information ( If different from Report to ) Company Name <b>WPX Energy Rocky Mountain, LLC (WILLCOP)</b> Street Address <b>1058 County Road 216</b> City _____ State _____ Zip _____ Parachute, CO 81636 Attention: <b>Leo Braun</b> Email Invoices: <b>Leo.Braun@wpxenergy.com</b>		Matrix Codes GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquids AIR - Air SOL - Other Solids WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Water TB - Trip Blank	
Accutest Sample # _____ Field ID / Point of Collection <b>MV 25-17 LF 1-2 (0.24in)</b> <b>MV 25-17 LF 1-4 (0.24in)</b>		MECH/VDI Val # _____ Date _____ Time _____ Sampled by _____ Matrix _____ # of bottles _____ Collection _____ Number of preserved bottles _____ HCl NaOH HNO3 H2SO4 H3PO4 DI Water MECH ENCORE		GRO/DRO _____ BTEX _____ PAH (COGCC Table 910 List) _____	
Turnaround Time ( Business days ) <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 5 Business Day Std. (per contract) <input checked="" type="checkbox"/> 1 Day Emergency Emergency & Rush TA data available VIA Lablink		Approved By (Accutest PM): Date: <b>JGM 12/8/12</b> _____ _____ _____ _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> COMMBN <input type="checkbox"/> COMMBN+ <input type="checkbox"/> 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 Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC/Narrative (+ = diagrams)	
Sample Custody must be documented below each time samples change possession, including courier delivery.		Comments / Special Instructions <b>Also email final report to: Karolina.Blaney@wpxenergy.com</b> <b>PLEASE RUSH 24 HR TAT</b>		LAB USE ONLY 01 02 02 7/30/13	
Relinquished by Sampler: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Received By: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Relinquished By: <b>[Signature]</b> Date Time: <b>7/30/13 12:28</b>	
Relinquished by Sampler: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Received By: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Relinquished By: <b>[Signature]</b> Date Time: <b>7/30/13 12:28</b>	
Relinquished by: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Received By: <b>[Signature]</b> Date Time: <b>7/29/13 14:00</b>		Relinquished By: <b>[Signature]</b> Date Time: <b>7/30/13 12:28</b>	

## D48702: Chain of Custody

Page 1 of 2



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D48702

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 7/30/2013 12:20:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV-17-LANDFARM 1 BATCH 6 BASELINE

Airbill #'s: HD-CO

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:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-MB	5V28344.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48702-1, D48702-2

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	95% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	102% 70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-BS	5V28345.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48702-1, D48702-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2540	102	70-130
100-41-4	Ethylbenzene	2500	2670	107	70-130
108-88-3	Toluene	2500	2480	99	70-130
1330-20-7	Xylene (total)	7500	8190	109	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	99%	64-130%
460-00-4	4-Bromofluorobenzene	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

\* = Outside of Control Limits.

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-BS	5V28346.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48702-1, D48702-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	97%	64-130%
460-00-4	4-Bromofluorobenzene	95%	62-131%
17060-07-0	1,2-Dichloroethane-D4	93%	70-130%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48664-2MS	5V28348.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2MSD	5V28349.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2	5V28347.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48702-1, D48702-2

CAS No.	Compound	D48664-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3690	3610	98	3760	102	4	64-139/30
100-41-4	Ethylbenzene	ND		3690	3690	100	3920	106	6	68-136/30
108-88-3	Toluene	ND		3690	3290	89	3540	96	7	60-130/30
1330-20-7	Xylene (total)	ND		11100	11500	104	12100	109	5	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D48664-2	Limits
2037-26-5	Toluene-D8	90%	92%	93%	64-130%
460-00-4	4-Bromofluorobenzene	111%	113%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	95%	93%	101%	70-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48664-2MS	5V28350.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2MSD	5V28351.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2	5V28347.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48702-1, D48702-2

CAS No.	Compound	D48664-2 ug/kg	Spike Q	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
---------	----------	-------------------	------------	-------------	---------	--------------	----------	-----	-------------------

CAS No.	Surrogate Recoveries	MS	MSD	D48664-2	Limits
2037-26-5	Toluene-D8	93%	95%	93%	64-130%
460-00-4	4-Bromofluorobenzene	107%	107%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	95%	90%	101%	70-130%

\* = Outside of Control Limits.

## GC/MS Semi-volatiles

### QC Data Summaries

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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:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-MB	3G15652.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48702-1, D48702-2

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	79% 10-159%
321-60-8	2-Fluorobiphenyl	99% 19-131%
1718-51-0	Terphenyl-d14	102% 18-150%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-BS	3G15653.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48702-1, D48702-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	67.2	81	68-130
120-12-7	Anthracene	83.3	72.8	87	67-130
56-55-3	Benzo(a)anthracene	83.3	76.0	91	65-130
205-99-2	Benzo(b)fluoranthene	83.3	71.5	86	44-130
207-08-9	Benzo(k)fluoranthene	83.3	78.6	94	56-131
50-32-8	Benzo(a)pyrene	83.3	72.6	87	62-130
218-01-9	Chrysene	83.3	74.9	90	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	78.3	94	55-130
206-44-0	Fluoranthene	83.3	71.3	86	70-130
86-73-7	Fluorene	83.3	68.6	82	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	78.5	94	56-130
91-20-3	Naphthalene	83.3	76.0	91	70-130
129-00-0	Pyrene	83.3	76.0	91	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	101%	10-159%
321-60-8	2-Fluorobiphenyl	80%	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:** D48702  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-MS	3G15655.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
OP8285-MSD	3G15656.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
D48703-1	3G15654.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48702-1, D48702-2

CAS No.	Compound	D48703-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		94.1	85.0	90	84.3	90	1	25-151/30
120-12-7	Anthracene	ND		94.1	83.3	89	85.5	91	3	39-159/30
56-55-3	Benzo(a)anthracene	ND		94.1	86.2	92	86.1	91	0	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		94.1	91.5	97	95.8	102	5	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		94.1	69.6	74	69.2	74	1	10-188/30
50-32-8	Benzo(a)pyrene	ND		94.1	80.8	86	81.9	87	1	32-144/30
218-01-9	Chrysene	ND		94.1	82.9	88	83.5	89	1	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		94.1	83.2	88	85.5	91	3	21-152/30
206-44-0	Fluoranthene	ND		94.1	84.3	90	86.5	92	3	36-157/30
86-73-7	Fluorene	ND		94.1	99.0	105	99.2	105	0	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		94.1	84.2	89	85.3	91	1	20-154/30
91-20-3	Naphthalene	14.2		94.1	84.7	75	88.4	79	4	10-163/30
129-00-0	Pyrene	8.6	J	94.1	97.4	94	95.5	92	2	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D48703-1	Limits
4165-60-0	Nitrobenzene-d5	83%	87%	90%	10-159%
321-60-8	2-Fluorobiphenyl	80%	82%	75%	19-131%
1718-51-0	Terphenyl-d14	89%	91%	96%	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: D48702  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1176-MB	GB21410.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48702-1, D48702-2

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	88% 60-140%

Blank Spike Summary

Job Number: D48702  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1176-BS	GB21423.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48702-1, D48702-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	109	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	99%	60-140%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D48702  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48675-1MS	GB21413.D	1	07/30/13	EV	n/a	n/a	GGB1176
D48675-1MSD	GB21414.D	1	07/30/13	EV	n/a	n/a	GGB1176
D48675-1	GB21412.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48702-1, D48702-2

CAS No.	Compound	D48675-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	8.43	J	158	157	94	151	90	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D48675-1	Limits
120-82-1	1,2,4-Trichlorobenzene	88%	88%	78%	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: D48702  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-MB	FD27028.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

The QC reported here applies to the following samples: Method: SW846-8015B  
D48702-1, D48702-2

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	89% 35-130%

9.1.1  
9

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-BS	FD27030.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

The QC reported here applies to the following samples:

Method: SW846-8015B

D48702-1, D48702-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	639	96	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	35-130%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48702

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 1 Batch 6 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-MS	FD27032.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322
OP8284-MSD	FD27034.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322
D48604-4	FD27036.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

The QC reported here applies to the following samples:

Method: SW846-8015B

D48702-1, D48702-2

CAS No.	Compound	D48604-4 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	795	604	76	695	87	14	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D48604-4	Limits
84-15-1	o-Terphenyl	75%	85%	78%	35-130%

\* = Outside of Control Limits.



07/31/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

NXEEPPARACH

Accutest Job Number: D48701

Sampling Date: 07/29/13

Report to:

Williams Production

karolina.blaney@wpxenergy.com

ATTN: Karolina Blaney

Total number of pages in report: **40**



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)

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Test results relate only to samples analyzed.

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D48701

CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline  
Project No: NXEEPPARACH

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D48701-1	07/29/13	17:15	JS	07/30/13	SO	Soil	MV 25-17 LF 2-10(0-24")
D48701-2	07/29/13	17:20	JS	07/30/13	SO	Soil	MV 25-17 LF 2-8 (0-24")
D48701-3	07/29/13	17:25	JS	07/30/13	SO	Soil	MV 25-17 LF 2-6 (0-24")

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** D48701

**Site:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

**Report Date** 7/31/2013 4:24:14 PM

On 07/30/2013, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D48701 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

**Matrix** SO

**Batch ID:** V5V1712

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48664-2MS, D48664-2MSD were used as the QC samples indicated.

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

**Matrix** SO

**Batch ID:** OP8285

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48703-1MS, D48703-1MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

**Matrix** SO

**Batch ID:** GGB1176

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48675-1MS, D48675-1MSD were used as the QC samples indicated.

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

**Matrix** SO

**Batch ID:** OP8284

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48604-4MS, D48604-4MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM2540B-2011 M

**Matrix** SO

**Batch ID:** GN21246

- The data for SM2540B-2011 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:** D48701  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline  
**Collected:** 07/29/13



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

### D48701-1 MV 25-17 LF 2-10(0-24")

Xylene (total)	1320	240	120	ug/kg	SW846 8260B
Fluorene	12.1	9.1	5.5	ug/kg	SW846 8270C BY SIM
Naphthalene	324	13	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	22.4	12	5.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	175	7.3	5.5	mg/kg	SW846-8015B

### D48701-2 MV 25-17 LF 2-8 (0-24")

Toluene	685	120	61	ug/kg	SW846 8260B
Xylene (total)	10800	240	120	ug/kg	SW846 8260B
Fluorene	32.9	9.3	5.6	ug/kg	SW846 8270C BY SIM
Naphthalene	938	13	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	179	12	6.1	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	522	74	55	mg/kg	SW846-8015B

### D48701-3 MV 25-17 LF 2-6 (0-24")

Xylene (total)	665	240	120	ug/kg	SW846 8260B
Fluorene	9.1 J	9.2	5.5	ug/kg	SW846 8270C BY SIM
Naphthalene	329	13	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	15.7	12	5.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	215	7.4	5.5	mg/kg	SW846-8015B

Sample Results

Report of Analysis



## Report of Analysis

<b>Client Sample ID:</b>	MV 25-17 LF 2-10(0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.2
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V28352.D	1	07/30/13	BD	n/a	n/a	V5V1712
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	59	30	ug/kg	
108-88-3	Toluene	ND	120	59	ug/kg	
100-41-4	Ethylbenzene	ND	120	23	ug/kg	
1330-20-7	Xylene (total)	1320	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%		64-130%
460-00-4	4-Bromofluorobenzene	112%		62-131%
17060-07-0	1,2-Dichloroethane-D4	101%		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 2-10(0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.2
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15662.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
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	9.1	4.7	ug/kg	
120-12-7	Anthracene	ND	9.1	4.7	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.1	4.7	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.1	4.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.1	4.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.1	4.7	ug/kg	
218-01-9	Chrysene	ND	9.1	4.7	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.1	4.7	ug/kg	
206-44-0	Fluoranthene	ND	9.1	4.7	ug/kg	
86-73-7	Fluorene	12.1	9.1	5.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.1	4.7	ug/kg	
91-20-3	Naphthalene	324	13	11	ug/kg	
129-00-0	Pyrene	ND	9.1	4.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	90%		10-159%
321-60-8	2-Fluorobiphenyl	84%		19-131%
1718-51-0	Terphenyl-d14	84%		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 2-10(0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.2
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21417.D	1	07/30/13	EV	n/a	n/a	GGB1176
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)	22.4	12	5.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	92%		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

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<b>Client Sample ID:</b>	MV 25-17 LF 2-10(0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-1	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.2
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD27088.D	1	07/31/13	TU	07/30/13	OP8284	GFD1324
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)	175	7.3	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	99%		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 2-8 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.0
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V28357.D	1	07/30/13	BD	n/a	n/a	V5V1712
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	61	30	ug/kg	
108-88-3	Toluene	685	120	61	ug/kg	
100-41-4	Ethylbenzene	ND	120	23	ug/kg	
1330-20-7	Xylene (total)	10800	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	98%		64-130%
460-00-4	4-Bromofluorobenzene	125%		62-131%
17060-07-0	1,2-Dichloroethane-D4	102%		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 2-8 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.0
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15663.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
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	9.3	4.8	ug/kg	
120-12-7	Anthracene	ND	9.3	4.8	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.3	4.8	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.3	4.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.3	4.8	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.3	4.8	ug/kg	
218-01-9	Chrysene	ND	9.3	4.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.3	4.8	ug/kg	
206-44-0	Fluoranthene	ND	9.3	4.8	ug/kg	
86-73-7	Fluorene	32.9	9.3	5.6	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.3	4.8	ug/kg	
91-20-3	Naphthalene	938	13	11	ug/kg	
129-00-0	Pyrene	ND	9.3	4.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	142%		10-159%
321-60-8	2-Fluorobiphenyl	110%		19-131%
1718-51-0	Terphenyl-d14	98%		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 2-8 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.0
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21418.D	1	07/30/13	EV	n/a	n/a	GGB1176
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)	179	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	104%		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 2-8 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-2	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.0
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD27040.D	10	07/30/13	TU	07/30/13	OP8284	GFD1322
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)	522	74	55	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 2-6 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-3	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.6
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V28353.D	1	07/30/13	BD	n/a	n/a	V5V1712
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	59	30	ug/kg	
108-88-3	Toluene	ND	120	59	ug/kg	
100-41-4	Ethylbenzene	ND	120	23	ug/kg	
1330-20-7	Xylene (total)	665	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%		64-130%
460-00-4	4-Bromofluorobenzene	112%		62-131%
17060-07-0	1,2-Dichloroethane-D4	103%		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 2-6 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-3	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.6
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15664.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
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	9.2	4.8	ug/kg	
120-12-7	Anthracene	ND	9.2	4.8	ug/kg	
56-55-3	Benzo(a)anthracene	ND	9.2	4.8	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	9.2	4.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	9.2	4.8	ug/kg	
50-32-8	Benzo(a)pyrene	ND	9.2	4.8	ug/kg	
218-01-9	Chrysene	ND	9.2	4.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	9.2	4.8	ug/kg	
206-44-0	Fluoranthene	ND	9.2	4.8	ug/kg	
86-73-7	Fluorene	9.1	9.2	5.5	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	9.2	4.8	ug/kg	
91-20-3	Naphthalene	329	13	11	ug/kg	
129-00-0	Pyrene	ND	9.2	4.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	108%		10-159%
321-60-8	2-Fluorobiphenyl	85%		19-131%
1718-51-0	Terphenyl-d14	93%		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

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<b>Client Sample ID:</b>	MV 25-17 LF 2-6 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-3	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.6
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21419.D	1	07/30/13	EV	n/a	n/a	GGB1176
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)	15.7	12	5.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	89%		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

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<b>Client Sample ID:</b>	MV 25-17 LF 2-6 (0-24")	<b>Date Sampled:</b>	07/29/13
<b>Lab Sample ID:</b>	D48701-3	<b>Date Received:</b>	07/30/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.6
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD27090.D	1	07/31/13	TU	07/30/13	OP8284	GFD1324
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)	215	7.4	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	108%		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

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Includes the following where applicable:

- Chain of Custody

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

<b>Client / Reporting Information</b> 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>		<b>Project Information</b> Project Name: <b>CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 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>1068 County Road 215</b> City: <b>Parachute, CO 81635</b> Client Purchase Order #: <b>NXEEPPARACH</b> Project Manager: <b>Leo Braun</b> Email Invoices: <b>Leo.Braun@wpxenergy.com</b>		<b>Requested Analysis (see TEST CODE sheet)</b> GRODRO _____ BTEX _____ PAH (COGCC Table 910 List) _____ Matrix Codes: _____ Div - Drinking 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 WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank									
Accutest Sample # _____ Field ID / Point of Collection: _____ MECH/DI Vial # _____ Date: _____ Time: _____ Sampled by: _____ Matrix: _____ # of bottles: _____ HCl _____ NaOH _____ HNO3 _____ H2SO4 _____ NONE _____ DI Water _____ MICH _____ ENCODE _____		Number of preserved bottles: _____ GRODRO _____ BTEX _____ PAH (COGCC Table 910 List) _____ Matrix Codes: _____ Div - Drinking 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 WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank											
Turnaround Time (Business days): _____ Approved By (Accutest PM): / Date: _____ JGM 12/8/12 _____ _____ _____ Emergency & Rush TIA data available via Lablink		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> State Forms Required <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Send Forms to State <input type="checkbox"/> COMMEN <input type="checkbox"/> Report by Fax <input checked="" type="checkbox"/> COMMBN+ <input checked="" type="checkbox"/> Report by PDF <input type="checkbox"/> EDD Format Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC/Narrative (+ = chromatograms) Comments / Special Instructions: _____ Also email final report to: <b>Karolina.Blaney@wpxenergy.com</b> PLEASE RUSH 24 HR TAT											
Relinquished by Sampler: _____ Date Time: <b>7/29/13 10:00</b> Relinquished by Sampler: _____ Date Time: _____ Relinquished by: _____ Date Time: _____		Sample Custody must be documented below each time samples change possession, including courier delivery. Received By: <b>Bill Service Center</b> Date Time: _____ Relinquished By: _____ Date Time: _____ Relinquished By: _____ Date Time: _____ Relinquished By: _____ Date Time: _____ Custody Seal # <b>HD/LO</b> <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact Preserved where applicable: <input checked="" type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. <b>4.0</b>											

**D48701: Chain of Custody**

**Page 1 of 2**

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D48701

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 7/30/2013 12:20:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV-25-17 LANDFARM 2 BATCH 8 BASELINE

Airbill #'s: HD/Co

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:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-MB	5V28344.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48701-1, D48701-2, D48701-3

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	95% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	102% 70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48701

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-BS	5V28345.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48701-1, D48701-2, D48701-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2540	102	70-130
100-41-4	Ethylbenzene	2500	2670	107	70-130
108-88-3	Toluene	2500	2480	99	70-130
1330-20-7	Xylene (total)	7500	8190	109	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	99%	64-130%
460-00-4	4-Bromofluorobenzene	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

\* = Outside of Control Limits.

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48701

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1712-BS	5V28346.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48701-1, D48701-2, D48701-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	97%	64-130%
460-00-4	4-Bromofluorobenzene	95%	62-131%
17060-07-0	1,2-Dichloroethane-D4	93%	70-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48664-2MS	5V28348.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2MSD	5V28349.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2	5V28347.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48701-1, D48701-2, D48701-3

CAS No.	Compound	D48664-2 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	3690	3610	98	3760	102	4	64-139/30
100-41-4	Ethylbenzene	ND	3690	3690	100	3920	106	6	68-136/30
108-88-3	Toluene	ND	3690	3290	89	3540	96	7	60-130/30
1330-20-7	Xylene (total)	ND	11100	11500	104	12100	109	5	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D48664-2	Limits
2037-26-5	Toluene-D8	90%	92%	93%	64-130%
460-00-4	4-Bromofluorobenzene	111%	113%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	95%	93%	101%	70-130%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48664-2MS	5V28350.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2MSD	5V28351.D	1	07/30/13	BD	n/a	n/a	V5V1712
D48664-2	5V28347.D	1	07/30/13	BD	n/a	n/a	V5V1712

The QC reported here applies to the following samples:

Method: SW846 8260B

D48701-1, D48701-2, D48701-3

CAS No.	Compound	D48664-2 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
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CAS No.	Surrogate Recoveries	MS	MSD	D48664-2	Limits
2037-26-5	Toluene-D8	93%	95%	93%	64-130%
460-00-4	4-Bromofluorobenzene	107%	107%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	95%	90%	101%	70-130%

\* = Outside of Control Limits.

## GC/MS Semi-volatiles

### QC Data Summaries

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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:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-MB	3G15652.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48701-1, D48701-2, D48701-3

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	79% 10-159%
321-60-8	2-Fluorobiphenyl	99% 19-131%
1718-51-0	Terphenyl-d14	102% 18-150%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-BS	3G15653.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48701-1, D48701-2, D48701-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	67.2	81	68-130
120-12-7	Anthracene	83.3	72.8	87	67-130
56-55-3	Benzo(a)anthracene	83.3	76.0	91	65-130
205-99-2	Benzo(b)fluoranthene	83.3	71.5	86	44-130
207-08-9	Benzo(k)fluoranthene	83.3	78.6	94	56-131
50-32-8	Benzo(a)pyrene	83.3	72.6	87	62-130
218-01-9	Chrysene	83.3	74.9	90	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	78.3	94	55-130
206-44-0	Fluoranthene	83.3	71.3	86	70-130
86-73-7	Fluorene	83.3	68.6	82	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	78.5	94	56-130
91-20-3	Naphthalene	83.3	76.0	91	70-130
129-00-0	Pyrene	83.3	76.0	91	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	101%	10-159%
321-60-8	2-Fluorobiphenyl	80%	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:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8285-MS	3G15655.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
OP8285-MSD	3G15656.D	1	07/30/13	DC	07/30/13	OP8285	E3G770
D48703-1	3G15654.D	1	07/30/13	DC	07/30/13	OP8285	E3G770

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D48701-1, D48701-2, D48701-3

CAS No.	Compound	D48703-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		94.1	85.0	90	84.3	90	1	25-151/30
120-12-7	Anthracene	ND		94.1	83.3	89	85.5	91	3	39-159/30
56-55-3	Benzo(a)anthracene	ND		94.1	86.2	92	86.1	91	0	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		94.1	91.5	97	95.8	102	5	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		94.1	69.6	74	69.2	74	1	10-188/30
50-32-8	Benzo(a)pyrene	ND		94.1	80.8	86	81.9	87	1	32-144/30
218-01-9	Chrysene	ND		94.1	82.9	88	83.5	89	1	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		94.1	83.2	88	85.5	91	3	21-152/30
206-44-0	Fluoranthene	ND		94.1	84.3	90	86.5	92	3	36-157/30
86-73-7	Fluorene	ND		94.1	99.0	105	99.2	105	0	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		94.1	84.2	89	85.3	91	1	20-154/30
91-20-3	Naphthalene	14.2		94.1	84.7	75	88.4	79	4	10-163/30
129-00-0	Pyrene	8.6	J	94.1	97.4	94	95.5	92	2	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D48703-1	Limits
4165-60-0	Nitrobenzene-d5	83%	87%	90%	10-159%
321-60-8	2-Fluorobiphenyl	80%	82%	75%	19-131%
1718-51-0	Terphenyl-d14	89%	91%	96%	18-150%

\* = Outside of Control Limits.

## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

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

Method Blank Summary

Job Number: D48701  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1176-MB	GB21410.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48701-1, D48701-2, D48701-3

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	88% 60-140%

Blank Spike Summary

Job Number: D48701  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1176-BS	GB21423.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48701-1, D48701-2, D48701-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	109	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	99%	60-140%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D48701  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D48675-1MS	GB21413.D	1	07/30/13	EV	n/a	n/a	GGB1176
D48675-1MSD	GB21414.D	1	07/30/13	EV	n/a	n/a	GGB1176
D48675-1	GB21412.D	1	07/30/13	EV	n/a	n/a	GGB1176

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

D48701-1, D48701-2, D48701-3

CAS No.	Compound	D48675-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	8.43	J	158	157	94	151	90	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D48675-1	Limits
120-82-1	1,2,4-Trichlorobenzene	88%	88%	78%	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: D48701  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-MB	FD27028.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

The QC reported here applies to the following samples: Method: SW846-8015B  
D48701-1, D48701-2, D48701-3

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	89% 35-130%

9.1.1  
9

Blank Spike Summary

Job Number: D48701  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-BS	FD27030.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

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

D48701-1, D48701-2, D48701-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	639	96	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	35-130%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D48701  
**Account:** WILLCOP WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8284-MS	FD27032.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322
OP8284-MSD	FD27034.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322
D48604-4	FD27036.D	1	07/30/13	TU	07/30/13	OP8284	GFD1322

The QC reported here applies to the following samples:

Method: SW846-8015B

D48701-1, D48701-2, D48701-3

CAS No.	Compound	D48604-4 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	795	604	76	695	87	14	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D48604-4	Limits
84-15-1	o-Terphenyl	75%	85%	78%	35-130%

\* = Outside of Control Limits.



08/21/13

## Technical Report for

**WPX Energy Rocky Mountain, LLC**

**CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline**

**NXEEPPARACH**

**Accutest Job Number: D49570**

**Sampling Date: 08/19/13**

### 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: 23**



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.

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D49570

CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline  
Project No: NXEEPPARACH

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
D49570-1	08/19/13	14:20 JS	08/20/13	SO Soil	MV 25-17 LF 2-8(0-24")
D49570-2	08/19/13	14:25 JS	08/20/13	SO Soil	MV 25-17 LF 2-2(0-24")
D49570-3	08/19/13	14:30 JS	08/20/13	SO Soil	MV 25-17 LF 2-4(0-24")

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** D49570

**Site:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

**Report Date** 8/21/2013 1:31:24 PM

On 08/20/2013, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D49570 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 GC By Method SW846 8015B

**Matrix** SO

**Batch ID:** GGB1196

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D49469-1MS, D49469-1MSD were used as the QC samples indicated.

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

**Matrix** SO

**Batch ID:** OP8406

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D49572-1MS, D49572-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM2540B-2011 M

**Matrix** SO

**Batch ID:** GN21563

- The data for SM2540B-2011 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:** D49570  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline  
**Collected:** 08/19/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D49570-1	MV 25-17 LF 2-8(0-24")					
TPH-GRO (C6-C10)		10.7 J	12	6.0	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		142	7.4	5.5	mg/kg	SW846-8015B
D49570-2	MV 25-17 LF 2-2(0-24")					
TPH-DRO (C10-C28)		97.8	7.4	5.5	mg/kg	SW846-8015B
D49570-3	MV 25-17 LF 2-4(0-24")					
TPH-GRO (C6-C10)		7.32 J	12	5.9	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		83.0	7.3	5.4	mg/kg	SW846-8015B

Sample Results

Report of Analysis

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 2-8(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-1	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21725.D	1	08/20/13	EV	n/a	n/a	GGB1196
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)	10.7	12	6.0	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	88%		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 2-8(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-1	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	90.3
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH012285.D	1	08/20/13	TU	08/20/13	OP8406	GFH667
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)	142	7.4	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	62%		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

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 2-2(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-2	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.9
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21726.D	1	08/20/13	EV	n/a	n/a	GGB1196
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	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	83%		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 2-2(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-2	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.9
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH012286.D	1	08/20/13	TU	08/20/13	OP8406	GFH667
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)	97.8	7.4	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	79%		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

Page 1 of 1

<b>Client Sample ID:</b>	MV 25-17 LF 2-4(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-3	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.8
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB21727.D	1	08/20/13	EV	n/a	n/a	GGB1196
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)	7.32	12	5.9	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 2-4(0-24")	<b>Date Sampled:</b>	08/19/13
<b>Lab Sample ID:</b>	D49570-3	<b>Date Received:</b>	08/20/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	91.8
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH012287.D	1	08/20/13	TU	08/20/13	OP8406	GFH667
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)	83.0	7.3	5.4	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

## Misc. Forms

5

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D49570

Client: OLSSON

Immediate Client Services Action Required: No

Date / Time Received: 8/20/2013 12:55:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25-17

Airbill #'s: CO

## 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"/> |

## 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 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:** D49570

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1196-MB	GB21719.D	1	08/20/13	EV	n/a	n/a	GGB1196

The QC reported here applies to the following samples:

Method: SW846 8015B

D49570-1, D49570-2, D49570-3

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	90% 60-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D49570

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1196-BS	GB21720.D	1	08/20/13	EV	n/a	n/a	GGB1196

The QC reported here applies to the following samples:

Method: SW846 8015B

D49570-1, D49570-2, D49570-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	101	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	101%	60-140%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D49570

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D49469-1MS	GB21722.D	1	08/20/13	EV	n/a	n/a	GGB1196
D49469-1MSD	GB21723.D	1	08/20/13	EV	n/a	n/a	GGB1196
D49469-1	GB21721.D	1	08/20/13	EV	n/a	n/a	GGB1196

The QC reported here applies to the following samples:

Method: SW846 8015B

D49570-1, D49570-2, D49570-3

CAS No.	Compound	D49469-1 mg/kg	Spike Q	mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		143	143	100	143	100	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D49469-1	Limits
120-82-1	1,2,4-Trichlorobenzene	100%	100%	91%	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: D49570  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8406-MB	FH012279.D	1	08/20/13	TU	08/20/13	OP8406	GFH667

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

D49570-1, D49570-2, D49570-3

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	80% 35-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D49570

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

**Project:** CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8406-BS	FH012280.D	1	08/20/13	TU	08/20/13	OP8406	GFH667

The QC reported here applies to the following samples:

Method: SW846-8015B

D49570-1, D49570-2, D49570-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	375	56	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	61%	35-130%

\* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D49570  
Account: WILLCOP WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 8 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8406-MS	FH012281.D	1	08/20/13	TU	08/20/13	OP8406	GFH667
OP8406-MSD	FH012282.D	1	08/20/13	TU	08/20/13	OP8406	GFH667
D49572-1	FH012289.D	1	08/20/13	TU	08/20/13	OP8406	GFH667

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

D49570-1, D49570-2, D49570-3

CAS No.	Compound	D49572-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	1240		764	1660	55	1860	81	11	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D49572-1	Limits
84-15-1	o-Terphenyl	65%	68%	71%	35-130%

\* = Outside of Control Limits.