



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



06/12/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

NXEEPPARACH

Accutest Job Number: D46975

Sampling Date: 06/06/13

Report to:

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ATTN: Tim Dobransky

Total number of pages in report: 30



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

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

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	6
Section 4: Sample Results	7
4.1: D46975-1: MV 25-17 LF 2-12(0-24 IN)	8
Section 5: Misc. Forms	12
5.1: Chain of Custody	13
Section 6: GC/MS Volatiles - QC Data Summaries	15
6.1: Method Blank Summary	16
6.2: Blank Spike Summary	17
6.3: Matrix Spike/Matrix Spike Duplicate Summary	18
Section 7: GC/MS Semi-volatiles - QC Data Summaries	19
7.1: Method Blank Summary	20
7.2: Blank Spike Summary	21
7.3: Matrix Spike/Matrix Spike Duplicate Summary	22
Section 8: GC Volatiles - QC Data Summaries	23
8.1: Method Blank Summary	24
8.2: Blank Spike Summary	25
8.3: Matrix Spike/Matrix Spike Duplicate Summary	26
Section 9: GC Semi-volatiles - QC Data Summaries	27
9.1: Method Blank Summary	28
9.2: Blank Spike Summary	29
9.3: Matrix Spike/Matrix Spike Duplicate Summary	30



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D46975

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

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D46975-1	06/06/13	10:25 JS	06/07/13	SO	Soil	MV 25-17 LF 2-12(0-24 IN)

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 D46975

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

Report Date 6/12/2013 4:47:43 PM

On 06/07/2013, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D46975 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: V5V1665

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP8005

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46975-1MS, D46975-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of Naphthalene are outside control limits. Outside control limits due to possible matrix interference.
- The RPD(s) for the MS and MSD recoveries of Naphthalene are outside control limits for sample OP8005-MSD. Variability of recovery may be due to sample matrix/homogeneity.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB1134

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP7991

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46996-8MS, D46996-8MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN20525

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

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

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

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

Summary of Hits

Job Number: D46975
Account: WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline
Collected: 06/06/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D46975-1	MV 25-17 LF 2-12(0-24 IN)					
Naphthalene		12.0 J	13	11	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		34.1	7.3	5.5	mg/kg	SW846-8015B

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MV 25-17 LF 2-12(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46975-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.0
Method:	SW846 8260B		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27337.D	1	06/07/13	BD	n/a	n/a	V5V1665
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	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)	ND	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	106%		62-131%
17060-07-0	1,2-Dichloroethane-D4	105%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MV 25-17 LF 2-12(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46975-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.0
Method:	SW846 8270C BY SIM SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15064.D	1	06/12/13	DC	06/12/13	OP8005	E3G736
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	9.2	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	ND	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	12.0	13	11	ug/kg	J
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	64%		10-159%
321-60-8	2-Fluorobiphenyl	64%		19-131%
1718-51-0	Terphenyl-d14	73%		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

Client Sample ID:	MV 25-17 LF 2-12(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46975-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.0
Method:	SW846 8015B		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20728.D	1	06/07/13	BD	n/a	n/a	GGB1134
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	5.9	mg/kg	

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

Client Sample ID:	MV 25-17 LF 2-12(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46975-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.0
Method:	SW846-8015B SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD25252.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
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)	34.1	7.3	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	56%		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: D46975

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 6/7/2013 3:50:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25-17 LANDFARMS 2 BATCH BASELIN

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

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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: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-MB	5V27324.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46975-1

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

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	99% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	107% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-BS	5V27325.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46975-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2450	98	70-130
100-41-4	Ethylbenzene	2500	2690	108	70-130
108-88-3	Toluene	2500	2440	98	70-130
1330-20-7	Xylene (total)	7500	8020	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	5V27327.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5MSD	5V27328.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5	5V27326.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46975-1

CAS No.	Compound	D46865-5 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3210	3170	99	3070	96	3	64-139/30
100-41-4	Ethylbenzene	ND		3210	3300	103	3250	101	2	68-136/30
108-88-3	Toluene	ND		3210	3000	94	2920	91	3	60-130/30
1330-20-7	Xylene (total)	ND		9620	10200	106	9920	103	3	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
2037-26-5	Toluene-D8	96%	95%	95%	64-130%
460-00-4	4-Bromofluorobenzene	115%	113%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	99%	104%	103%	70-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8005-MB	3G15062.D	1	06/12/13	DC	06/12/13	OP8005	E3G736

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46975-1

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

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	78% 10-159%
321-60-8	2-Fluorobiphenyl	82% 19-131%
1718-51-0	Terphenyl-d14	88% 18-150%

Blank Spike Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8005-BS	3G15063.D	1	06/12/13	DC	06/12/13	OP8005	E3G736

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46975-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	64.8	78	68-130
120-12-7	Anthracene	83.3	68.9	83	67-130
56-55-3	Benzo(a)anthracene	83.3	70.1	84	65-130
205-99-2	Benzo(b)fluoranthene	83.3	74.1	89	44-130
207-08-9	Benzo(k)fluoranthene	83.3	70.5	85	56-131
50-32-8	Benzo(a)pyrene	83.3	70.9	85	62-130
218-01-9	Chrysene	83.3	76.3	92	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	73.3	88	55-130
206-44-0	Fluoranthene	83.3	62.6	75	70-130
86-73-7	Fluorene	83.3	64.1	77	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	74.1	89	56-130
91-20-3	Naphthalene	83.3	69.7	84	70-130
129-00-0	Pyrene	83.3	71.5	86	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	76%	10-159%
321-60-8	2-Fluorobiphenyl	82%	19-131%
1718-51-0	Terphenyl-d14	91%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46975
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8005-MS	3G15065.D	1	06/12/13	DC	06/12/13	OP8005	E3G736
OP8005-MSD	3G15066.D	1	06/12/13	DC	06/12/13	OP8005	E3G736
D46975-1	3G15064.D	1	06/12/13	DC	06/12/13	OP8005	E3G736

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46975-1

CAS No.	Compound	D46975-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		91.1	53.9	59	68.5	75	24	25-151/30
120-12-7	Anthracene	ND		91.1	63.9	70	79.6	87	22	39-159/30
56-55-3	Benzo(a)anthracene	ND		91.1	65.5	72	85.0	93	26	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		91.1	87.7	96	100	109	13	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		91.1	45.3	50	48.8	53	7	10-188/30
50-32-8	Benzo(a)pyrene	ND		91.1	61.1	67	74.0	81	19	32-144/30
218-01-9	Chrysene	ND		91.1	61.1	67	78.9	86	25	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		91.1	56.7	62	67.1	73	17	21-152/30
206-44-0	Fluoranthene	ND		91.1	64.8	71	79.8	87	21	36-157/30
86-73-7	Fluorene	ND		91.1	65.8	72	78.0	85	17	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		91.1	57.2	63	67.0	73	16	20-154/30
91-20-3	Naphthalene	12.0	J	91.1	199	205* a	103	99	64* b	10-163/30
129-00-0	Pyrene	ND		91.1	73.8	81	95.2	104	25	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D46975-1	Limits
4165-60-0	Nitrobenzene-d5	69%	74%	64%	10-159%
321-60-8	2-Fluorobiphenyl	72%	77%	64%	19-131%
1718-51-0	Terphenyl-d14	79%	87%	73%	18-150%

(a) Outside control limits due to possible matrix interference.

(b) Variability of recovery may be due to sample matrix/homogeneity.

* = 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: D46975
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-MB	GB20717.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46975-1

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	90% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-BS	GB20718.D	1	06/07/13	BD	n/a	n/a	GGB1134

The QC reported here applies to the following samples:

Method: SW846 8015B

D46975-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	110	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46975
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	GB20720.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5MSD	GB20721.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5	GB20719.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46975-1

CAS No.	Compound	D46865-5 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	141	140	99	139	98	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
120-82-1	1,2,4-Trichlorobenzene	98%	96%	90%	60-140%

8.3.1
8

* = 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: D46975
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MB	FD25242.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

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

D46975-1

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	67% 35-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46975

Account: WILLCOP WPX Energy Rocky Mountain, LLC

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

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-BS	FD25243.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

The QC reported here applies to the following samples:

Method: SW846-8015B

D46975-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	517	78	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	77%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46975
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 2 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MS	FD25244.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
OP7991-MSD	FD25245.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
D46996-8	FD25262.D	1	06/11/13	TU	06/10/13	OP7991	GFD1252

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

D46975-1

CAS No.	Compound	D46996-8 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	25.4	721	535	71	473	62	12	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D46996-8	Limits
84-15-1	o-Terphenyl	74%	60%	58%	35-130%

* = Outside of Control Limits.



06/12/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

NXEEPPARACH

Accutest Job Number: D46974

Sampling Date: 06/06/13

Report to:

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

Total number of pages in report: 30



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

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

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	6
Section 4: Sample Results	7
4.1: D46974-1: MV 25-17 LF 2-1(0-24 IN)	8
Section 5: Misc. Forms	12
5.1: Chain of Custody	13
Section 6: GC/MS Volatiles - QC Data Summaries	15
6.1: Method Blank Summary	16
6.2: Blank Spike Summary	17
6.3: Matrix Spike/Matrix Spike Duplicate Summary	18
Section 7: GC/MS Semi-volatiles - QC Data Summaries	19
7.1: Method Blank Summary	20
7.2: Blank Spike Summary	21
7.3: Matrix Spike/Matrix Spike Duplicate Summary	22
Section 8: GC Volatiles - QC Data Summaries	23
8.1: Method Blank Summary	24
8.2: Blank Spike Summary	25
8.3: Matrix Spike/Matrix Spike Duplicate Summary	26
Section 9: GC Semi-volatiles - QC Data Summaries	27
9.1: Method Blank Summary	28
9.2: Blank Spike Summary	29
9.3: Matrix Spike/Matrix Spike Duplicate Summary	30



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D46974

CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline
Project No: NXEEPPARACH

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
D46974-1	06/06/13	10:30 JS	06/07/13	SO Soil	MV 25-17 LF 2-1(0-24 IN)

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 D46974

Site: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Report Date 6/12/2013 8:19:32 AM

On 06/07/2013, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D46974 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: V5V1665
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP7990
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46973-1MS, D46973-1MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB1134
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP7991
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46996-8MS, D46996-8MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN20525
------------------	--------------------------

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

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

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

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

Summary of Hits

Job Number: D46974
Account: WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline
Collected: 06/06/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D46974-1	MV 25-17 LF 2-1(0-24 IN)					
Naphthalene		13.1	13	11	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		39.8	7.3	5.5	mg/kg	SW846-8015B

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MV 25-17 LF 2-1(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46974-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	90.8
Method:	SW846 8260B		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27336.D	1	06/07/13	BD	n/a	n/a	V5V1665
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 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)	ND	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	106%		62-131%
17060-07-0	1,2-Dichloroethane-D4	105%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MV 25-17 LF 2-1(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46974-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	90.8
Method:	SW846 8270C BY SIM SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15027.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
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	9.2	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	ND	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	13.1	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	68%		10-159%
321-60-8	2-Fluorobiphenyl	81%		19-131%
1718-51-0	Terphenyl-d14	87%		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

Client Sample ID:	MV 25-17 LF 2-1(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46974-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	90.8
Method:	SW846 8015B		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20727.D	1	06/07/13	BD	n/a	n/a	GGB1134
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	6.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%		

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

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

Report of Analysis

Page 1 of 1

Client Sample ID:	MV 25-17 LF 2-1(0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46974-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	90.8
Method:	SW846-8015B SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD25251.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
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)	39.8	7.3	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	65%		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: D46974

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 6/7/2013 12:50:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25 17 LANDFARM 2 BATCH 3 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

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: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-MB	5V27324.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46974-1

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

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	99% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	107% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-BS	5V27325.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46974-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2450	98	70-130
100-41-4	Ethylbenzene	2500	2690	108	70-130
108-88-3	Toluene	2500	2440	98	70-130
1330-20-7	Xylene (total)	7500	8020	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	5V27327.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5MSD	5V27328.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5	5V27326.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46974-1

CAS No.	Compound	D46865-5 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3210	3170	99	3070	96	3	64-139/30
100-41-4	Ethylbenzene	ND		3210	3300	103	3250	101	2	68-136/30
108-88-3	Toluene	ND		3210	3000	94	2920	91	3	60-130/30
1330-20-7	Xylene (total)	ND		9620	10200	106	9920	103	3	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
2037-26-5	Toluene-D8	96%	95%	95%	64-130%
460-00-4	4-Bromofluorobenzene	115%	113%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	99%	104%	103%	70-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-MB	3G15020.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46974-1

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

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	58% 10-159%
321-60-8	2-Fluorobiphenyl	62% 19-131%
1718-51-0	Terphenyl-d14	93% 18-150%

Blank Spike Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-BS	3G15021.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46974-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	68.9	83	68-130
120-12-7	Anthracene	83.3	69.7	84	67-130
56-55-3	Benzo(a)anthracene	83.3	67.9	81	65-130
205-99-2	Benzo(b)fluoranthene	83.3	75.2	90	44-130
207-08-9	Benzo(k)fluoranthene	83.3	74.3	89	56-131
50-32-8	Benzo(a)pyrene	83.3	71.9	86	62-130
218-01-9	Chrysene	83.3	72.8	87	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	74.6	90	55-130
206-44-0	Fluoranthene	83.3	66.8	80	70-130
86-73-7	Fluorene	83.3	65.2	78	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	75.4	90	56-130
91-20-3	Naphthalene	83.3	59.0	71	70-130
129-00-0	Pyrene	83.3	67.5	81	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	63%	10-159%
321-60-8	2-Fluorobiphenyl	82%	19-131%
1718-51-0	Terphenyl-d14	87%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-MS	3G15023.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
OP7990-MSD	3G15024.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
D46973-1	3G15022.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46974-1

CAS No.	Compound	D46973-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		90.3	82.2	91	83.4	92	1	25-151/30
120-12-7	Anthracene	ND		90.3	83.0	92	85.1	94	2	39-159/30
56-55-3	Benzo(a)anthracene	ND		90.3	79.7	88	81.1	90	2	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		90.3	79.4	88	82.3	91	4	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		90.3	79.8	88	80.1	88	0	10-188/30
50-32-8	Benzo(a)pyrene	ND		90.3	74.6	83	75.7	84	1	32-144/30
218-01-9	Chrysene	ND		90.3	79.2	88	80.2	89	1	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		90.3	71.2	79	72.8	80	2	21-152/30
206-44-0	Fluoranthene	ND		90.3	84.4	93	85.7	95	2	36-157/30
86-73-7	Fluorene	ND		90.3	87.8	97	92.4	102	5	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		90.3	71.3	79	72.2	80	1	20-154/30
91-20-3	Naphthalene	12.9	J	90.3	92.8	88	97.7	94	5	10-163/30
129-00-0	Pyrene	ND		90.3	84.7	94	87.0	96	3	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D46973-1	Limits
4165-60-0	Nitrobenzene-d5	68%	74%	56%	10-159%
321-60-8	2-Fluorobiphenyl	85%	86%	74%	19-131%
1718-51-0	Terphenyl-d14	84%	86%	77%	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: D46974
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-MB	GB20717.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46974-1

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	90% 60-140%

Blank Spike Summary

Job Number: D46974
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-BS	GB20718.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46974-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	110	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	GB20720.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5MSD	GB20721.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5	GB20719.D	1	06/07/13	BD	n/a	n/a	GGB1134

The QC reported here applies to the following samples:

Method: SW846 8015B

D46974-1

CAS No.	Compound	D46865-5 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	141	140	99	139	98	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
120-82-1	1,2,4-Trichlorobenzene	98%	96%	90%	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: D46974
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MB	FD25242.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

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

D46974-1

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	67% 35-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46974

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-BS	FD25243.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

The QC reported here applies to the following samples:

Method: SW846-8015B

D46974-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	517	78	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	77%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46974
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 2 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MS	FD25244.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
OP7991-MSD	FD25245.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
D46996-8	FD25262.D	1	06/11/13	TU	06/10/13	OP7991	GFD1252

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

D46974-1

CAS No.	Compound	D46996-8 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	25.4	721	535	71	473	62	12	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D46996-8	Limits
84-15-1	o-Terphenyl	74%	60%	58%	35-130%

* = Outside of Control Limits.



06/12/13

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

NXEEPPARACH

Accutest Job Number: D46973

Sampling Date: 06/06/13

Report to:

**Olsson Associates
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Grand Junction, CO 81505
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ATTN: Tim Dobransky**

Total number of pages in report: 34



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

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

**Scott Heideman
Laboratory Director**

Client Service contact: Renea Jackson 303-425-6021

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

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	6
Section 4: Sample Results	7
4.1: D46973-1: MV 25-17 LF 1-6 (0-24 IN)	8
4.2: D46973-2: MV 25-17 LF 1-7 (0-24 IN)	12
Section 5: Misc. Forms	16
5.1: Chain of Custody	17
Section 6: GC/MS Volatiles - QC Data Summaries	19
6.1: Method Blank Summary	20
6.2: Blank Spike Summary	21
6.3: Matrix Spike/Matrix Spike Duplicate Summary	22
Section 7: GC/MS Semi-volatiles - QC Data Summaries	23
7.1: Method Blank Summary	24
7.2: Blank Spike Summary	25
7.3: Matrix Spike/Matrix Spike Duplicate Summary	26
Section 8: GC Volatiles - QC Data Summaries	27
8.1: Method Blank Summary	28
8.2: Blank Spike Summary	29
8.3: Matrix Spike/Matrix Spike Duplicate Summary	30
Section 9: GC Semi-volatiles - QC Data Summaries	31
9.1: Method Blank Summary	32
9.2: Blank Spike Summary	33
9.3: Matrix Spike/Matrix Spike Duplicate Summary	34



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D46973

CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline
Project No: NXEEPPARACH

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D46973-1	06/06/13	10:15	JS	06/07/13	SO	Soil	MV 25-17 LF 1-6 (0-24 IN)
D46973-2	06/06/13	10:20	JS	06/07/13	SO	Soil	MV 25-17 LF 1-7 (0-24 IN)

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 D46973

Site: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Report Date 6/12/2013 8:15:49 AM

On 06/07/2013, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D46973 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: V5V1665
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP7990
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46973-1MS, D46973-1MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB1134
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46865-5MS, D46865-5MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP7991
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D46996-8MS, D46996-8MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN20525
------------------	--------------------------

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

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

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

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

Summary of Hits

Job Number: D46973
Account: WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline
Collected: 06/06/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D46973-1	MV 25-17 LF 1-6 (0-24 IN)					
Naphthalene TPH-DRO (C10-C28)		12.9 J	13	11	ug/kg	SW846 8270C BY SIM
		38.7	7.2	5.4	mg/kg	SW846-8015B
D46973-2	MV 25-17 LF 1-7 (0-24 IN)					
TPH-DRO (C10-C28)		69.9	7.3	5.4	mg/kg	SW846-8015B

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MV 25-17 LF 1-6 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	92.1
Method:	SW846 8260B		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27334.D	1	06/07/13	BD	n/a	n/a	V5V1665
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	59	29	ug/kg	
108-88-3	Toluene	ND	120	59	ug/kg	
100-41-4	Ethylbenzene	ND	120	22	ug/kg	
1330-20-7	Xylene (total)	ND	230	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	97%		64-130%
460-00-4	4-Bromofluorobenzene	107%		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

Client Sample ID:	MV 25-17 LF 1-6 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	92.1
Method:	SW846 8270C BY SIM SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15022.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
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	9.0	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	ND	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	12.9	13	11	ug/kg	J
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	56%		10-159%
321-60-8	2-Fluorobiphenyl	74%		19-131%
1718-51-0	Terphenyl-d14	77%		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

Client Sample ID:	MV 25-17 LF 1-6 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	92.1
Method:	SW846 8015B		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20725.D	1	06/07/13	BD	n/a	n/a	GGB1134
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	5.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	86%		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

Client Sample ID:	MV 25-17 LF 1-6 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-1	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	92.1
Method:	SW846-8015B SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD25249.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
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)	38.7	7.2	5.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	64%		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

Client Sample ID:	MV 25-17 LF 1-7 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-2	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.7
Method:	SW846 8260B		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V27335.D	1	06/07/13	BD	n/a	n/a	V5V1665
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	29	ug/kg	
108-88-3	Toluene	ND	120	59	ug/kg	
100-41-4	Ethylbenzene	ND	120	22	ug/kg	
1330-20-7	Xylene (total)	ND	230	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	105%		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

Client Sample ID:	MV 25-17 LF 1-7 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-2	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.7
Method:	SW846 8270C BY SIM SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G15026.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
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	9.1	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	ND	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	ND	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	69%		10-159%
321-60-8	2-Fluorobiphenyl	81%		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

Page 1 of 1

Client Sample ID:	MV 25-17 LF 1-7 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-2	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.7
Method:	SW846 8015B		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB20726.D	1	06/07/13	BD	n/a	n/a	GGB1134
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	5.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	86%		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

Client Sample ID:	MV 25-17 LF 1-7 (0-24 IN)	Date Sampled:	06/06/13
Lab Sample ID:	D46973-2	Date Received:	06/07/13
Matrix:	SO - Soil	Percent Solids:	91.7
Method:	SW846-8015B SW846 3546		
Project:	CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD25250.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	69.9	7.3	5.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	78%		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: D46973

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 6/7/2013 12:50:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: MV 25-17 LANDFARM 1 BATCH 3 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: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-MB	5V27324.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46973-1, D46973-2

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	99% 64-130%
460-00-4	4-Bromofluorobenzene	92% 62-131%
17060-07-0	1,2-Dichloroethane-D4	107% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1665-BS	5V27325.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46973-1, D46973-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2450	98	70-130
100-41-4	Ethylbenzene	2500	2690	108	70-130
108-88-3	Toluene	2500	2440	98	70-130
1330-20-7	Xylene (total)	7500	8020	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	64-130%
460-00-4	4-Bromofluorobenzene	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	5V27327.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5MSD	5V27328.D	1	06/07/13	BD	n/a	n/a	V5V1665
D46865-5	5V27326.D	1	06/07/13	BD	n/a	n/a	V5V1665

The QC reported here applies to the following samples:

Method: SW846 8260B

D46973-1, D46973-2

CAS No.	Compound	D46865-5		Spike	MS	MS	MSD	MSD	RPD	Limits
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	%		Rec/RPD
71-43-2	Benzene	ND		3210	3170	99	3070	96	3	64-139/30
100-41-4	Ethylbenzene	ND		3210	3300	103	3250	101	2	68-136/30
108-88-3	Toluene	ND		3210	3000	94	2920	91	3	60-130/30
1330-20-7	Xylene (total)	ND		9620	10200	106	9920	103	3	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
2037-26-5	Toluene-D8	96%	95%	95%	64-130%
460-00-4	4-Bromofluorobenzene	115%	113%	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	99%	104%	103%	70-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-MB	3G15020.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46973-1, D46973-2

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	58% 10-159%
321-60-8	2-Fluorobiphenyl	62% 19-131%
1718-51-0	Terphenyl-d14	93% 18-150%

Blank Spike Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-BS	3G15021.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46973-1, D46973-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	68.9	83	68-130
120-12-7	Anthracene	83.3	69.7	84	67-130
56-55-3	Benzo(a)anthracene	83.3	67.9	81	65-130
205-99-2	Benzo(b)fluoranthene	83.3	75.2	90	44-130
207-08-9	Benzo(k)fluoranthene	83.3	74.3	89	56-131
50-32-8	Benzo(a)pyrene	83.3	71.9	86	62-130
218-01-9	Chrysene	83.3	72.8	87	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	74.6	90	55-130
206-44-0	Fluoranthene	83.3	66.8	80	70-130
86-73-7	Fluorene	83.3	65.2	78	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	75.4	90	56-130
91-20-3	Naphthalene	83.3	59.0	71	70-130
129-00-0	Pyrene	83.3	67.5	81	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	63%	10-159%
321-60-8	2-Fluorobiphenyl	82%	19-131%
1718-51-0	Terphenyl-d14	87%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46973
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7990-MS	3G15023.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
OP7990-MSD	3G15024.D	1	06/10/13	DC	06/10/13	OP7990	E3G734
D46973-1	3G15022.D	1	06/10/13	DC	06/10/13	OP7990	E3G734

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D46973-1, D46973-2

CAS No.	Compound	D46973-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		90.3	82.2	91	83.4	92	1	25-151/30
120-12-7	Anthracene	ND		90.3	83.0	92	85.1	94	2	39-159/30
56-55-3	Benzo(a)anthracene	ND		90.3	79.7	88	81.1	90	2	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		90.3	79.4	88	82.3	91	4	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		90.3	79.8	88	80.1	88	0	10-188/30
50-32-8	Benzo(a)pyrene	ND		90.3	74.6	83	75.7	84	1	32-144/30
218-01-9	Chrysene	ND		90.3	79.2	88	80.2	89	1	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		90.3	71.2	79	72.8	80	2	21-152/30
206-44-0	Fluoranthene	ND		90.3	84.4	93	85.7	95	2	36-157/30
86-73-7	Fluorene	ND		90.3	87.8	97	92.4	102	5	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		90.3	71.3	79	72.2	80	1	20-154/30
91-20-3	Naphthalene	12.9	J	90.3	92.8	88	97.7	94	5	10-163/30
129-00-0	Pyrene	ND		90.3	84.7	94	87.0	96	3	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D46973-1	Limits
4165-60-0	Nitrobenzene-d5	68%	74%	56%	10-159%
321-60-8	2-Fluorobiphenyl	85%	86%	74%	19-131%
1718-51-0	Terphenyl-d14	84%	86%	77%	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: D46973
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-MB	GB20717.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46973-1, D46973-2

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	90% 60-140%

8.1.1
8

Blank Spike Summary

Job Number: D46973
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1134-BS	GB20718.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46973-1, D46973-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	110	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D46973
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D46865-5MS	GB20720.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5MSD	GB20721.D	1	06/07/13	BD	n/a	n/a	GGB1134
D46865-5	GB20719.D	1	06/07/13	BD	n/a	n/a	GGB1134

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

D46973-1, D46973-2

CAS No.	Compound	D46865-5 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	141	140	99	139	98	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D46865-5	Limits
120-82-1	1,2,4-Trichlorobenzene	98%	96%	90%	60-140%

8.3.1
8

* = 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: D46973
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MB	FD25242.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

The QC reported here applies to the following samples: Method: SW846-8015B
D46973-1, D46973-2

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	67% 35-130%

Blank Spike Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-BS	FD25243.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252

The QC reported here applies to the following samples:

Method: SW846-8015B

D46973-1, D46973-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	517	78	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	77%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D46973

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: MV 25-17 Landfarm 1 Batch 3 Baseline

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7991-MS	FD25244.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
OP7991-MSD	FD25245.D	1	06/10/13	TU	06/10/13	OP7991	GFD1252
D46996-8	FD25262.D	1	06/11/13	TU	06/10/13	OP7991	GFD1252

The QC reported here applies to the following samples:

Method: SW846-8015B

D46973-1, D46973-2

CAS No.	Compound	D46996-8 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	25.4	721	535	71	473	62	12	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D46996-8	Limits
84-15-1	o-Terphenyl	74%	60%	58%	35-130%

* = Outside of Control Limits.