

State of Colorado
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

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

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

GENERAL INFORMATION

OGCC Operator Number: 69175	Contact Name and Telephone
Name of Operator: PDC Energy, Inc.	Name: Charity Fleenor
Address: 1775 Sherman Street, Suite 3000	No: (303) 860-5800
City: Denver State: CO Zip: 80203	Fax: (303) 860-5838
API/Facility No: 05-123-12198	County: Weld
Facility Name: Maxey 2, 33, 43, 44-24, 24D	Facility Number: 322874
Well Name: Maxey 2, 33, 43, 44-24, 24D	Well Number: Maxey 2, 33, 43, 44-24, 24D
Location (QtrQtr, Sec, Twp, Rng, Meridian): SESE S24 T5N R65W	Latitude: 40.378936 Longitude: -104.605708

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): _____ Condensate / Oil

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☒ Y ☐ N If yes, attach evaluation. ** Please see 'Potential Receptors' section below.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): _____ Cropland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: _____ Nunn clay loam, 0 to 1 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): _____ A residence is located approximately 965' southwest of the location. The nearest surface water is 15' east and the nearest water well is 1,065' southwest. No other water wells are located within a 1/4-mile radius. Depth to groundwater is approx. 4-7 feet bgs.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	Refer to the attached Figures 2 and 4, and Table 1	Excavation and soil sampling
<input type="checkbox"/> Vegetation		
<input checked="" type="checkbox"/> Groundwater	Refer to the attached Figures 3 and 5, and Table 2	Drilling and groundwater sampling
<input type="checkbox"/> Surface water		

REMEDIATION WORKPLAN

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

On October 19, 2014, a historic dump line release was discovered during routine pressure testing at the Maxey 2, 33, 43, 44-24, 24D production facility. Excavation activities were summarized in an Initial/Supplemental Form 19 submitted on October 20, 2014 (Document # 400711710). On February 11, 2015, historic impacts were discovered during flowline replacement activities approximately 300 feet south of the initial dump line release area. Excavation activities associated with the flowline were summarized in an Initial Form 19 submitted on February 12, 2015 (Document # 400791362) and a Supplemental Form 19 submitted on February 20, 2015 (Document # 400795993). A topographic map of the site is included as Figure 1.

Describe how source is to be removed:

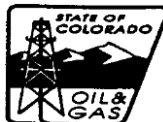
Between October 2014 and February 2015, a total of approximately 260 cubic yards of impacted material were removed from both excavation areas and transported to the Waste Management Facility in Ault, Colorado for disposal under PDC waste manifests. Soil samples collected from the sidewalls of the final excavation extent associated with the dump line release exhibited constituent concentrations below COGCC Table 910-1 soil standards. One soil sample collected from the east sidewall of the final excavation extent associated with the flowline release exhibited benzene and total petroleum hydrocarbon (TPH) concentrations in exceedance of regulatory standards. The remaining soil samples collected from the flowline excavation area and adjacent Latham Ditch embankment were below regulatory standards. Groundwater was encountered in both excavation areas at approximately 4-7 feet below ground surface (bgs). A total of approximately 605 barrels of groundwater were removed from both excavation areas using a vacuum truck and transported to a licensed water disposal facility. The two groundwater samples (GW01 and S-GW01) collected from the excavation areas exhibited benzene and total xylenes concentrations in exceedance of COGCC Table 910-1 groundwater standards. Soil analytical data is summarized in Table 1 and groundwater analytical data is summarized in Table 2. Laboratory analytical reports are included as Attachment A.

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

Prior to backfilling, a total of approximately 395 pounds of activated carbon were introduced to the two excavation areas to address remaining dissolved phase petroleum hydrocarbon impacts. On December 3, 2014, PDC installed six monitoring wells (BH01 - BH06) using direct push drilling methods adjacent to the former dump line release area for monitoring and remediation purposes. Groundwater was encountered during drilling activities at approximately 3 feet bgs. Quarterly groundwater monitoring was initiated in December 2014 at the six monitoring well locations. Between first and second quarters 2015, a site-wide decrease in groundwater levels was observed and as such, monitoring wells did not contain sufficient groundwater for sample collection. Consequently, on September 21, 2015, PDC replaced the six monitoring wells (BH01-R - BH06-R) and installed four additional wells (BH07 - BH10) down-gradient to the former source area. The initial six monitoring wells (BH01 - BH06) were subsequently abandoned during drilling activities. Monitoring well locations are illustrated on Figure 3.

On September 22, 2015, PDC installed four temporary monitoring wells (BH01 - BH04) using direct push drilling methods adjacent to the former flowline release area for monitoring and remediation purposes. Groundwater was encountered during drilling activities at approximately 4 feet bgs. Quarterly groundwater monitoring was initiated on September 25, 2015, at the four monitoring well locations, as illustrated on Figure 5.

Monitored natural attenuation (MNA) was selected as the remedial strategy for the site. Enhanced fluid recovery (EFR) and air sparge (AS) activities may be initiated to address remaining petroleum hydrocarbon impacts in groundwater and soil adjacent to sample SS01 (associated with flowline release). PDC will conduct quarterly groundwater monitoring at the fourteen (14) temporary monitoring well locations until BTEX concentrations are in compliance with COGCC Table 910-1 standards for four consecutive quarters.

State of Colorado
Oil and Gas Conservation Commission1120 Lincoln Street, Suite 801, Denver, Colorado
(303) 894-2100 Fax 894-2109

Page 2

REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

Tracking Number: _____

Name of Operator: PDC Energy, Inc.

OGCC Operator No: 69175

Received Date: _____

Well Name & No: Maxey 2, 33, 43, 44-24, 24D

Facility Name & No.: Maxey 2, 33, 43, 44-24, 24D

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

Groundwater was encountered during excavation and drilling activities at approximately 3-7 feet below ground surface (bgs). Quarterly groundwater sampling at the six monitoring locations (BH01 - BH06) associated with the dump line release was initiated in December 2014. Due to a site-wide decrease in groundwater levels, six replacement monitoring wells (BH01-R - BH06-R) and four point-of-compliance monitoring wells (BH07 - BH10) were installed on September 21, 2015. Monitoring well locations associated with the dump line release are illustrated on Figure 3.

Quarterly groundwater monitoring was initiated in September 2015 at the four monitoring well locations (BH01 - BH04) associated with the flowline release, as illustrated on Figure 5.

PDC will continue quarterly groundwater sampling at the fourteen (14) monitoring well locations using USEPA Method 8260. Groundwater monitoring will continue until four consecutive quarters of BTEX concentrations in compliance with COGCC Table 910-1 groundwater standards are achieved.

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

The excavation areas were backfilled and compacted with clean material and the ground surface was re-contoured to match pre-existing conditions. Subsequent to attainment of closure, the temporary monitoring wells will be plugged and abandoned

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

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

Based on soil analytical results collected during excavation activities, remaining hydrocarbon impacts in soil associated with the dump line release were successfully removed. However, remaining soil impacts are present at the former east sidewall of the excavation area associated with the flowline release. In addition, the extent of dissolved phase hydrocarbon impacts has been delineated in the monitoring wells associated with the flowline release, but has not been delineated in the monitoring wells associated with the dump line release.

As such, additional assessment, drilling, and sampling activities will be completed to delineate the extent of remaining soil and groundwater impacts on site. The excavation extents and soil sample locations associated with the dump line and flowline releases are illustrated on Figure 2 and Figure 4, respectively. Monitoring well locations and third quarter 2015 groundwater analytical results for the dump line and flowline releases are illustrated on Figure 3 and Figure 5, respectively. Soil analytical results are summarized in Table 1 and groundwater analytical results are summarized in Table 2. The laboratory analytical reports are included as Attachment A.

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

Soil was disposed of at the Waste Management Facility in Ault, Colorado under PDC waste manifests. Impacted groundwater was disposed of at a licensed water disposal facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 10/19/2014

Date Site Investigation Completed: TBD

Remediation Plan Submitted: _____

Remediation Start Date: 12/3/2014

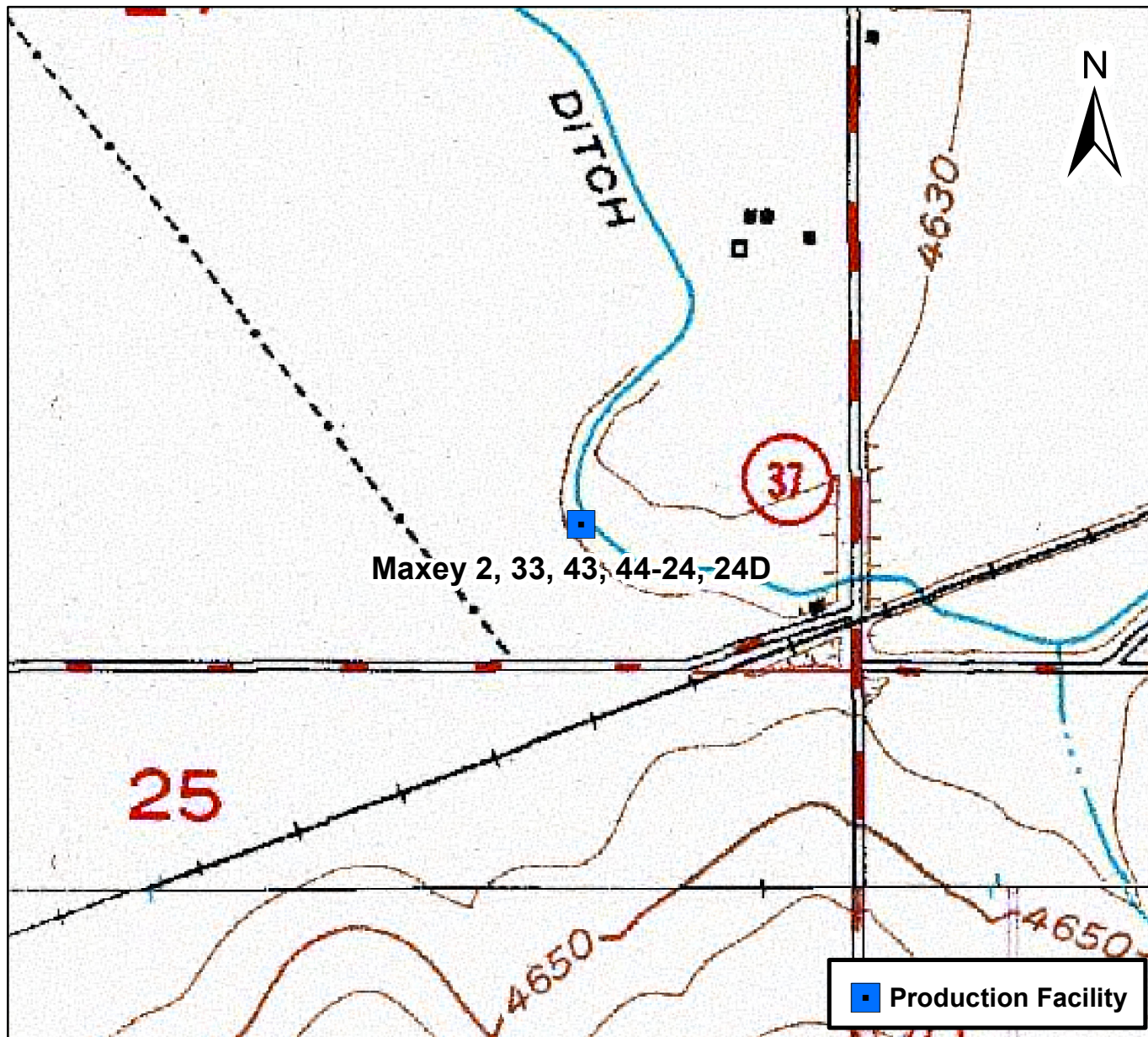
Anticipated Completion Date: TBD

Actual Completion Date: TBD

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

Print Name: Charity FleenorSigned: _____ Title: EHS Director Date: _____

OGCC Approved: _____ Title: _____ Date: _____



0 750 1,500
Feet

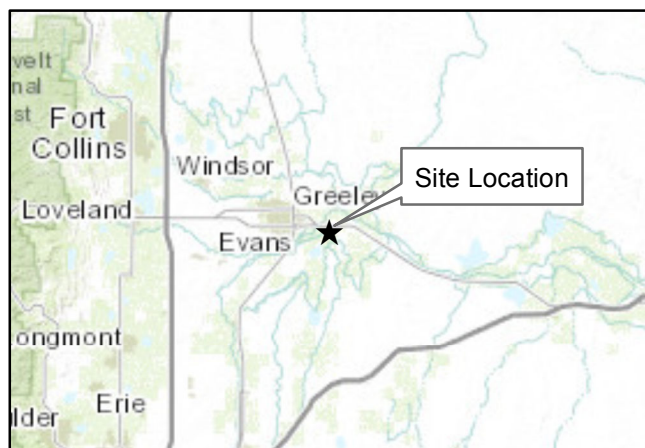









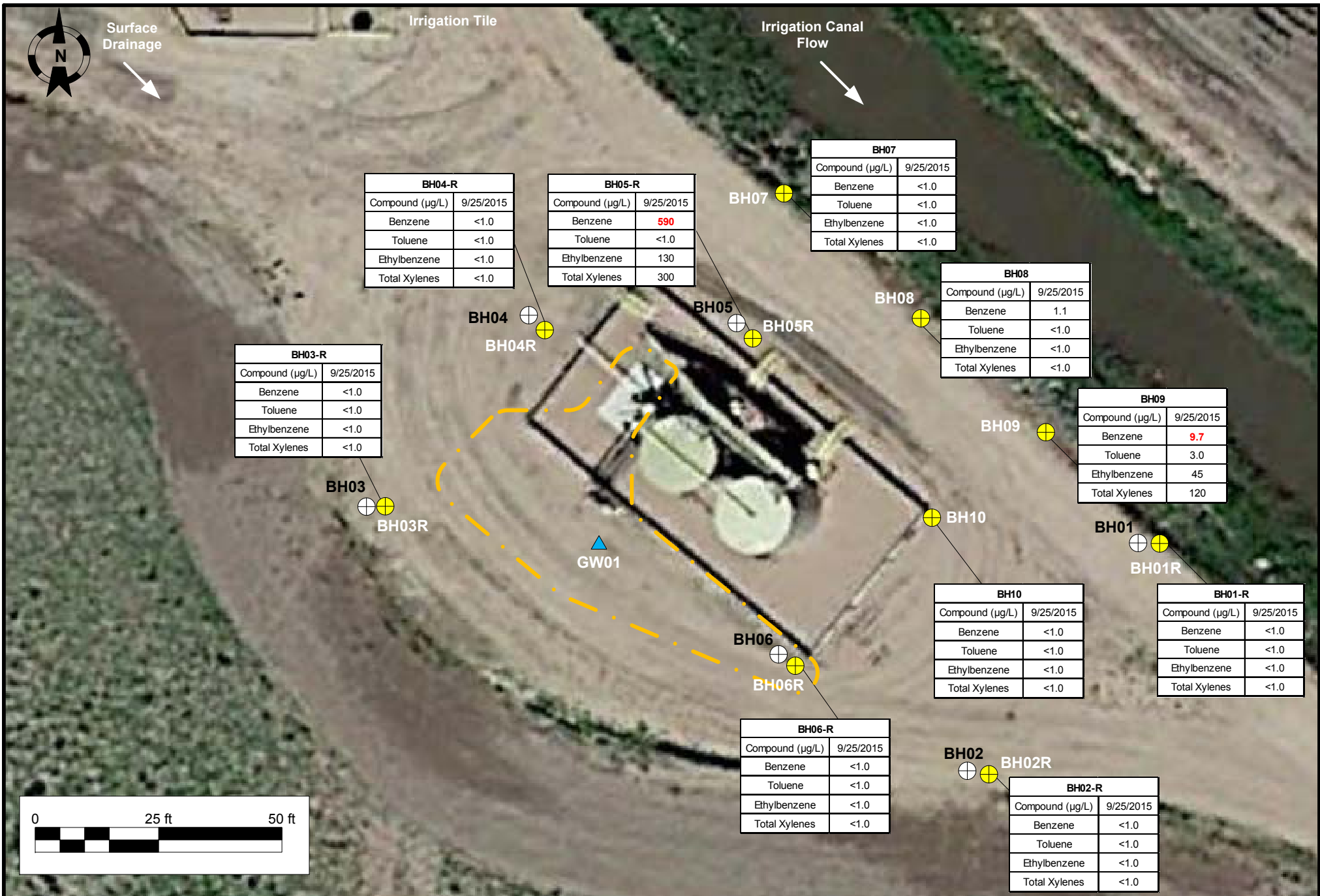
Figure 1






Site Location Map
Maxey 2, 33, 43, 44-24, 24D
SESE S24 T5N R65W
Weld County, Colorado

Drawn By: DBA
Date: 10/20/2014








DRAWN BY: ESS	Facility Diagram PDC Energy, Inc. – DJ Basin Maxey 2, 33, 34, 43, 44-24, 24D Dump Line Release SESE S24 T5N R65W Weld County, CO	 TASMAN GEOSCIENCES	LEGEND  Approximate Area of Excavation  Former Produced Water Vault Location  PDC Dump Lines  PDC Flowline  Approximate Soil Sample Location  Approximate Groundwater Sample Location	FIGURE 2 EXCAVATION SITE MAP
DATE: 5/19/2015		6899 Pecos Street, Unit C Denver, CO 80221		



DRAWN BY: CAW	Facility Diagram PDC Energy, Inc. – DJ Basin Maxey 2, 33, 34, 43, 44-24, 24D Dump Line Release SESE S24 T5N R65W Weld County, CO	 TASMAN GEOSCIENCES 6899 Pecos Street, Unit C Denver, CO 80221	LEGEND  Approximate Excavation Extent  Excavation Groundwater Sample Location  Abandoned Monitoring Well Location  Monitoring Well Location	FIGURE 3 GROUNDWATER ANALYTICAL RESULTS
DATE: 10/5/2015				



DRAWN BY: CAW	Facility Diagram PDC Energy, Inc. – DJ Basin Maxey 2, 33, 43, 44-24 & 24D Flowline Release SWSE S24 T5N R65W Weld County, CO	 TASMAN GEOSCIENCES	6899 Pecos Street, Unit C Denver, CO 80221	LEGEND  Approximate Excavation Extent  Approximate Release Location  Soil Sample Location  Groundwater Sample Location	FIGURE 4 EXCAVATION SITE MAP
DATE: 8/31/2015					



Maxey 2, 33, 43, 44-24D
Dump Line Release Location

Irrigation Canal
Flow

Surface
Drainage

BH01	
Compound (µg/L)	9/25/2015
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0

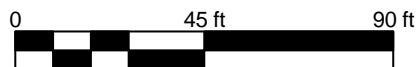
BH03	
Compound (µg/L)	9/25/2015
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0

BH01
S-GW01
BH02

BH02	
Compound (µg/L)	9/25/2015
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0

SS01
BH03
BH04

BH04	
Compound (µg/L)	9/25/2015
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0



© 2015 Google

DRAWN BY: CAW

DATE: 8/31/2015

Facility Diagram
PDC Energy, Inc. – DJ Basin
Maxey 2, 33, 43, 44-24 & 24D
Flowline Release
SWSE S24 T5N R65W
Weld County, CO



6899 Pecos Street, Unit C
Denver, CO 80221

LEGEND

- Approximate Excavation Extent
- Approximate Release Location
- Excavation Soil Sample Location
- Excavation Groundwater Sample Location
- Monitoring Well Location

FIGURE 5
GROUNDWATER
ANALYTICAL
RESULTS MAP

TABLE 1
MAXEY 2, 33, 43, 44-24, 24D
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH ⁽²⁾ (mg/kg)	Naphthalene (mg/kg)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500	23
DUMP LINE RELEASE								
SS01 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS02 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS03 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS05 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS06 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS07 @ 2'	10/15/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS08 @ 2'	10/16/2014	2	0.017	<0.0050	<0.0050	0.025	<0.010	<50
SS09 @ 2'	10/16/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS10 @ 2'	10/16/2014	2	0.0044	<0.0050	<0.0050	0.017	<0.010	<50
SS11 @ 2'	10/16/2014	2	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
FLOWLINE RELEASE								
SS01	2/12/2015	5'	0.80	11	13	140	6,100	2.6
SS02	2/12/2015	5'	<0.0020	<0.0050	<0.0050	<0.010	13	<0.010
SS03	2/12/2015	5'	<0.0020	<0.0050	<0.0050	<0.010	<50	<0.010
SS04	2/12/2015	5'	0.0085	<0.0050	<0.0050	0.017	2.1	<0.010
LD-SS01	2/12/2015	8"	<0.0020	<0.0050	<0.0050	<0.010	<50	<0.010

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

bgs = Below ground surface

BOLD = Analytical result is in exceedance of COGCC soil standards.

TABLE 2
MAXEY 2, 33, 43, 44-24, 24D
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
DUMP LINE RELEASE						
GW01	10/17/2014	340	350	290	4,200	~ 4
BH01	12/17/2014	<1.0	<1.0	<1.0	<1.0	6.24
BH01	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH01	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH01-R	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.63
BH02	12/17/2014	<1.0	<1.0	<1.0	<1.0	5.42
BH02	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH02	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH02-R	9/25/2015	<1.0	<1.0	<1.0	<1.0	2.48
BH03	12/17/2014	<1.0	<1.0	<1.0	<1.0	4.99
BH03	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH03	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH03-R	9/25/2015	<1.0	<1.0	<1.0	<1.0	2.42
BH04	12/17/2014	<1.0	<1.0	<1.0	<1.0	6.01
BH04	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH04	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH04-R	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.15
BH05	12/17/2014	2,200	<1.0	42	300	8.88
BH05	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH05	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH05-R	9/25/2015	590	<1.0	130	300	3.57
BH06	12/17/2014	29	<1.0	3.5	53	7.94
BH06	3/19/2015	DRY	DRY	DRY	DRY	DRY
BH06	6/25/2015	DRY	DRY	DRY	DRY	DRY
BH06-R	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.47
BH07	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.60
BH08	9/25/2015	1.1	<1.0	<1.0	<1.0	2.34

TABLE 2
MAXEY 2, 33, 43, 44-24, 24D
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
BH09	9/25/2015	9.7	3.0	45	120	3.53
BH10	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.48
FLOWLINE RELEASE						
S-GW01	2/11/2015	90	130	100	1,700	~ 7
BH01	9/25/2015	<1.0	<1.0	<1.0	<1.0	6.36
BH02	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.42
BH03	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.82
BH04	9/25/2015	<1.0	<1.0	<1.0	<1.0	3.68

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

NM = Not Measured

DRY = Insufficient groundwater volume to collect sample

BOLD = Analytical result is in exceedance of COGCC groundwater standards.

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 17, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 10/15/14 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2'	1410120-01	Soil	10/15/14 08:50	10/15/14 14:30
SS02@2'	1410120-02	Soil	10/15/14 08:55	10/15/14 14:30
SS03@2'	1410120-03	Soil	10/15/14 09:10	10/15/14 14:30
SS04@2'	1410120-04	Soil	10/15/14 09:15	10/15/14 14:30
SS05@2'	1410120-05	Soil	10/15/14 09:20	10/15/14 14:30
SS06@2'	1410120-06	Soil	10/15/14 09:25	10/15/14 14:30
SS07@2'	1410120-07	Soil	10/15/14 09:30	10/15/14 14:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:40

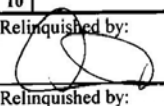
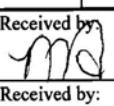
Summit Scientific ^{S₂} 1410120

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: PDC Energy Project Manager: Brandon Bruns
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: MAXEY 2, 33, 43, 44-24, 24D
Sampler Name: C. WASH Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	SLUG BULK/ NAB. CLO	SPS DRO		
1	850102	10/15/14	850	1			X			X		X	X			
2	850202		855													
3	850302		910													
4	850402		985													
5	850502		920													
6	850602		925													
7	850702		950													
8																
9																
10																

Relinquished by: 	Date/Time: 10/15/14 1430	Received by: 	Date/Time: 10/15/14 1430	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours	72 hours Standard	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 3°C		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS01@2'
1410120-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 08:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		81.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS02@2'
1410120-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS03@2'
1410120-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:40

SS04@2'
1410120-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	44	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	44	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS05@2'
1410120-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS06@2'
1410120-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

SS07@2'
1410120-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/14 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1410165	10/15/14	10/15/14	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/14 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410164	10/15/14	10/15/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/15/14 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410165 - EPA 3550A

Blank (1410165-BLK1)

Prepared & Analyzed: 10/15/14

C10-C28 (TEPH-DRO)	ND	50	mg/kg
C28-C36 (TEPH-ORO)	ND	50	"

LCS (1410165-BS1)

Prepared & Analyzed: 10/15/14

C10-C28 (TEPH-DRO)	570	50	mg/kg	501	114	73-134
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Matrix Spike (1410165-MS1)

Source: 1410120-01

Prepared & Analyzed: 10/15/14

C10-C28 (TEPH-DRO)	581	50	mg/kg	473	ND	123	50-148
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Matrix Spike Dup (1410165-MSD1)

Source: 1410120-01

Prepared & Analyzed: 10/15/14

C10-C28 (TEPH-DRO)	562	50	mg/kg	472	ND	119	50-148	3.46	13
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410164 - EPA 5030 Soil MS

Blank (1410164-BLK1)

Prepared & Analyzed: 10/15/14

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0282</i>		<i>"</i>	<i>0.0396</i>		<i>71.1</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0383</i>		<i>"</i>	<i>0.0400</i>		<i>95.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>96.1</i>	<i>21-167</i>			

LCS (1410164-BS1)

Prepared & Analyzed: 10/15/14

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.120	0.0020	"	0.100		120	58-130			
Toluene	0.131	0.0050	"	0.100		131	61-134			
Ethylbenzene	0.132	0.0050	"	0.0992		133	74-139			
m,p-Xylene	0.262	0.010	"	0.200		131	73-137			
o-Xylene	0.128	0.0050	"	0.0984		130	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0288</i>		<i>"</i>	<i>0.0396</i>		<i>72.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>21-167</i>			

Matrix Spike (1410164-MS1)

Source: 1410120-01

Prepared & Analyzed: 10/15/14

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.116	0.0020	"	0.0971	ND	120	30-131			
Toluene	0.127	0.0050	"	0.0971	ND	131	30-134			
Ethylbenzene	0.131	0.0050	"	0.0963	ND	136	22-153			
m,p-Xylene	0.259	0.010	"	0.194	ND	134	10-159			
o-Xylene	0.127	0.0050	"	0.0955	ND	133	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0310</i>		<i>"</i>	<i>0.0384</i>		<i>80.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0388</i>		<i>98.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0369</i>		<i>"</i>	<i>0.0388</i>		<i>95.0</i>	<i>21-167</i>			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410164 - EPA 5030 Soil MS

Matrix Spike Dup (1410164-MSD1)		Source: 1410120-01			Prepared & Analyzed: 10/15/14					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.113	0.0020	"	0.0940	ND	120	30-131	2.97	34	
Toluene	0.125	0.0050	"	0.0940	ND	133	30-134	1.22	30	
Ethylbenzene	0.125	0.0050	"	0.0932	ND	135	22-153	4.28	24	
m,p-Xylene	0.250	0.010	"	0.188	ND	133	10-159	3.62	68	
o-Xylene	0.122	0.0050	"	0.0925	ND	132	31-151	3.66	38	
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0372		79.9	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0376		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0376		96.9	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:40

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 17, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 10/16/14 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08@2'	1410133-01	Soil	10/16/14 11:00	10/16/14 16:45
SS09@2'	1410133-02	Soil	10/16/14 11:10	10/16/14 16:45
SS10@2'	1410133-03	Soil	10/16/14 11:30	10/16/14 16:45
SS11@2'	1410133-04	Soil	10/16/14 11:40	10/16/14 16:45

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

SS08@2'
1410133-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/16/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410173	10/16/14	10/16/14	8015M	

Date Sampled: 10/16/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/16/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410172	10/16/14	10/16/14	EPA 8260B	
Benzene	0.017	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.025	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/16/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		81.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.1 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

SS09@2'
1410133-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/16/14 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410173	10/16/14	10/16/14	8015M	

Date Sampled: 10/16/14 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/16/14 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410172	10/16/14	10/16/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/16/14 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

SS10@2'
1410133-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/16/14 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410173	10/16/14	10/16/14	8015M	

Date Sampled: 10/16/14 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/16/14 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410172	10/16/14	10/16/14	EPA 8260B	
Benzene	0.0044	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.017	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/16/14 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.1 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

SS11@2'
1410133-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/16/14 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410173	10/16/14	10/16/14	8015M	

Date Sampled: 10/16/14 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/16/14 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1410172	10/16/14	10/16/14	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/16/14 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410173 - EPA 3550A

Blank (1410173-BLK1)

Prepared & Analyzed: 10/16/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1410173-BS1)

Prepared & Analyzed: 10/16/14

C10-C28 (DRO) 494 50 mg/kg 501 98.7 73-134

Matrix Spike (1410173-MS1)

Source: 1410129-01

Prepared & Analyzed: 10/16/14

C10-C28 (DRO) 1060 50 mg/kg 469 1840 NR 50-148 QM-07

Matrix Spike Dup (1410173-MSD1)

Source: 1410129-01

Prepared & Analyzed: 10/16/14

C10-C28 (DRO) 1440 50 mg/kg 497 1840 NR 50-148 30.8 13 QM-07

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410172 - EPA 5030 Soil MS

Blank (1410172-BLK1)

Prepared & Analyzed: 10/16/14

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0396</i>		<i>104</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>21-167</i>			

LCS (1410172-BS1)

Prepared & Analyzed: 10/16/14

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0964	0.0020	"	0.0750		129	58-130			
Toluene	0.0993	0.0050	"	0.0750		132	61-134			
Ethylbenzene	0.102	0.0050	"	0.0744		137	74-139			
m,p-Xylene	0.206	0.010	"	0.150		137	73-137			
o-Xylene	0.103	0.0050	"	0.0738		139	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0434</i>		<i>"</i>	<i>0.0396</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>21-167</i>			

Matrix Spike (1410172-MS1)

Source: 1410129-01

Prepared & Analyzed: 10/16/14

Naphthalene	0.0204	0.010	mg/kg		0.0733		10-158			
Benzene	0.0716	0.0020	"	0.0712	ND	101	30-131			
Toluene	0.0656	0.0050	"	0.0712	0.0182	66.7	30-134			
Ethylbenzene	0.0610	0.0050	"	0.0706	0.0203	57.7	22-153			
m,p-Xylene	0.0701	0.010	"	0.142	0.123	NR	10-159			QM-07
o-Xylene	0.153	0.0050	"	0.0700	0.300	NR	31-151			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0426</i>		<i>"</i>	<i>0.0376</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0344</i>		<i>"</i>	<i>0.0380</i>		<i>90.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0380</i>		<i>111</i>	<i>21-167</i>			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/17/14 06:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410172 - EPA 5030 Soil MS

Matrix Spike Dup (1410172-MSD1)	Source: 1410129-01			Prepared & Analyzed: 10/16/14						
Naphthalene	0.0332	0.010	mg/kg		0.0733		10-158	47.5	42	QM-07
Benzene	0.0649	0.0020	"	0.0727	ND	89.3	30-131	9.85	34	
Toluene	0.0556	0.0050	"	0.0727	0.0182	51.5	30-134	16.5	30	
Ethylbenzene	0.0460	0.0050	"	0.0721	0.0203	35.7	22-153	28.0	24	QM-07
m,p-Xylene	0.0548	0.010	"	0.145	0.123	NR	10-159	24.6	68	QM-07
o-Xylene	0.206	0.0050	"	0.0715	0.300	NR	31-151	29.5	38	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0439		"	0.0384		114	23-173			
Surrogate: Toluene-d8	0.0323		"	0.0388		83.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0489		"	0.0388		126	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/17/14 06:38

Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 18, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 43, 44-24, 24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 10/17/14 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/18/14 20:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1410148-01	Water	10/17/14 09:15	10/17/14 17:15

Summit Scientific 1410148

S₂

741 Corporate Circle, Suite J&K • Golden, Colorado 80401
303-277-9310 • 303-374-5933

Client: PDC Energy
Address: _____
City/State/Zip: _____
Phone: _____
Fax: _____
Project Manager: Brandon Bruns
E-Mail: _____
Project Name: MAXEY 2, 33, 43, 44-24-24D
Project Number: 1410148-01

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested	Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil		
1	GW01	10/17/14	9:15	3	X				X			
2												
3												
4												
5												
6												
7												
8												
9												
10												

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	10/17/14 11:00 AM		10/17/14 17:15	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	Sample Integrity: <input checked="" type="checkbox"/> MON LAB AM! Temperature Upon Receipt: 3°C PM 10:15!
				48 hours <input type="checkbox"/>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/18/14 20:13

GW01
1410148-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/14 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	340	100	ug/l	100	1410194	10/17/14	10/18/14	EPA 8260B	
Toluene	350	100	"	"	"	"	"	"	
Ethylbenzene	290	1.0	"	1	"	"	10/18/14	"	
Xylenes (total)	4200	100	"	100	"	"	10/18/14	"	

Date Sampled: **10/17/14 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		83.6 %	37-154		"	"	10/18/14	"	
<i>Surrogate: Toluene-d8</i>		108 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.1 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/18/14 20:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410194 - EPA 5030 Water MS

Blank (1410194-BLK1)

Prepared: 10/17/14 Analyzed: 10/18/14

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	10.8		"	13.2		82.1	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.6	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	45-146			

LCS (1410194-BS1)

Prepared: 10/17/14 Analyzed: 10/18/14

Benzene	39.6	1.0	ug/l	33.3		119	51-132			
Toluene	39.2	1.0	"	33.3		118	51-138			
Ethylbenzene	41.0	1.0	"	33.1		124	58-146			
m,p-Xylene	81.8	2.0	"	66.5		123	57-144			
o-Xylene	40.9	1.0	"	32.8		125	53-146			
Surrogate: 1,2-Dichloroethane-d4	10.5		"	13.2		79.5	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.9	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.1	45-146			

Matrix Spike (1410194-MS1)

Source: 1410138-01

Prepared: 10/17/14 Analyzed: 10/18/14

Benzene	40.5	1.0	ug/l	33.3	ND	121	34-141			
Toluene	42.8	1.0	"	33.3	1.21	125	27-151			
Ethylbenzene	43.6	1.0	"	33.1	ND	132	29-160			
m,p-Xylene	86.2	2.0	"	66.5	ND	130	20-166			
o-Xylene	42.8	1.0	"	32.8	ND	130	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.1		"	13.2		84.3	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.7	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		97.0	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/18/14 20:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1410194 - EPA 5030 Water MS

Matrix Spike (1410194-MS2)		Source: 1410138-01			Prepared: 10/17/14		Analyzed: 10/18/14			
Benzene	65.4	1.0	ug/l	33.3	ND	196	34-141			QM-07
Toluene	42.3	1.0	"	33.3	1.21	123	27-151			
Ethylbenzene	58.5	1.0	"	33.1	ND	177	29-160			QM-07
m,p-Xylene	83.3	2.0	"	66.5	ND	125	20-166			
o-Xylene	42.0	1.0	"	32.8	ND	128	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.2		84.5	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.1	45-146			

Matrix Spike Dup (1410194-MSD1)		Source: 1410138-01			Prepared: 10/17/14		Analyzed: 10/18/14			
Benzene	40.6	1.0	ug/l	33.3	ND	122	34-141	0.345	32	
Toluene	41.5	1.0	"	33.3	1.21	121	27-151	3.18	25	
Ethylbenzene	43.1	1.0	"	33.1	ND	130	29-160	1.27	50	
m,p-Xylene	84.1	2.0	"	66.5	ND	126	20-166	2.43	36	
o-Xylene	42.6	1.0	"	32.8	ND	130	33-159	0.351	26	
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.2		84.6	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.9	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 43, 44-24, 24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/18/14 20:13

Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite J ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

December 23, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 34, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 12/17/14 15:54. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV". The signature is fluid and cursive, with a small "IV" superscripted at the end.

Joseph J Egry IV For Paul Shrewsbury
President

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1412153-01	Water	12/17/14 10:50	12/17/14 15:54
BH02	1412153-02	Water	12/17/14 10:55	12/17/14 15:54
BH03	1412153-03	Water	12/17/14 11:00	12/17/14 15:54
BH04	1412153-04	Water	12/17/14 11:05	12/17/14 15:54
BH05	1412153-05	Water	12/17/14 11:10	12/17/14 15:54
BH06	1412153-06	Water	12/17/14 11:15	12/17/14 15:54

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Summit Scientific ¹⁴¹²¹⁵³

S₂

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client: PDC/Tasman Project Manager: Brandon Bruns Page 1 of 1
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: Maxey 2, 33, 34, 43, 44-24, 24D
Sampler Name: Eric Sigel Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)					
1	BH01	12/17/14	1050	3	X				X				X				
2	BH02		1055														
3	BH03		1100														
4	BH04		1105														
5	BH05		1110														
6	BH06		1115														
7																	
8																	
9																	
10																	

Relinquished by: <u>Eric A. Sigel</u>	Date/Time: <u>1554 12/17/14</u>	Received by: <u>Aisha Uddham</u>	Date/Time: <u>1554 12/17/14</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>4.0</u> Intact: Yes No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

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Soil samples reported on a wet-weight basis unless otherwise indicated on results page.

Summit Scientific

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Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Sample Receipt Checklist

S2 Work Order: 1412153

Client: PDC

Client Project ID: Maxey 2, 33, 34, 43, 44-24, 24D

Shipped Via: Pick up

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Cooler ID	<u>1</u>				
Temp (°C)	<u>4.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input checked="" type="checkbox"/>			HCl
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, etc.				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Joseph J Egry IV
Custodian Printed Name

Joseph J Egry IV
Signature or Initials of Custodian

12/18/14
Date/Time

Soil samples reported on a wet-weight basis unless otherwise indicated on results page.

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/23/14 15:39

BH01
1412153-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1412219	12/21/14	12/21/14 19:21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	105 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	91.9 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.9 %	45-146			"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

BH02
1412153-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1412219	12/21/14	12/21/14 19:45	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	106 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	92.6 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.4 %	45-146			"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

BH03
1412153-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1412219	12/21/14	12/21/14 20:10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	107 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	92.9 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	45-146			"	"	"	"	

Summit Scientific

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Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

BH04
1412153-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1412219	12/21/14	12/21/14 20:37	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	105 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	94.6 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	45-146			"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

BH05
1412153-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2200	100	ug/l	100	1412219	12/21/14	12/21/14 21:05	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	42	1.0	"	"	"	"	"	"	
Xylenes (total)	300	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	103 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	97.5 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.6 %	45-146			"	"	"	"	

Summit Scientific

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Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

BH06
1412153-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/17/14 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	29	1.0	ug/l	1	1412219	12/21/14	12/21/14 21:33	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	3.5	1.0	"	"	"	"	"	"	
Xylenes (total)	53	1.0	"	"	"	"	"	"	

Date Sampled: **12/17/14 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	101 %	37-154			"	"	"	"	
Surrogate: Toluene-d8	94.8 %	45-149			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	45-146			"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1412219 - EPA 5030 Water MS

Blank (1412219-BLK1)

Prepared & Analyzed: 12/20/14

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	37-154			
Surrogate: Toluene-d8	12.5		"	13.3		94.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.6	45-146			

LCS (1412219-BS1)

Prepared & Analyzed: 12/20/14

Benzene	31.0	1.0	ug/l	33.3		93.1	51-132			
Toluene	29.6	1.0	"	33.3		88.9	51-138			
Ethylbenzene	32.3	1.0	"	33.1		97.6	58-146			
m,p-Xylene	63.0	2.0	"	66.5		94.6	57-144			
o-Xylene	32.6	1.0	"	32.8		99.4	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.2		105	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.5	45-146			

LCS (1412219-BS2)

Prepared & Analyzed: 12/20/14

Benzene	30.5	1.0	ug/l	33.3		91.6	51-132			
Toluene	29.6	1.0	"	33.3		88.9	51-138			
Ethylbenzene	32.2	1.0	"	33.1		97.3	58-146			
m,p-Xylene	63.2	2.0	"	66.5		95.1	57-144			
o-Xylene	32.6	1.0	"	32.8		99.3	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.2		103	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.7	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.6	45-146			

Summit Scientific

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Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1412219 - EPA 5030 Water MS

Matrix Spike (1412219-MS1)		Source: 1412152-01			Prepared & Analyzed: 12/20/14					
Benzene	30.8	1.0	ug/l	33.3	ND	92.5	34-141			
Toluene	29.9	1.0	"	33.3	ND	89.7	27-151			
Ethylbenzene	32.1	1.0	"	33.1	ND	97.0	29-160			
m,p-Xylene	62.8	2.0	"	66.5	ND	94.3	20-166			
o-Xylene	32.7	1.0	"	32.8	ND	99.7	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.2		109	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.8	45-146			

Matrix Spike (1412219-MS2)		Source: 1412152-02			Prepared & Analyzed: 12/21/14					
Benzene	31.2	1.0	ug/l	33.3	ND	93.6	34-141			
Toluene	29.7	1.0	"	33.3	ND	89.2	27-151			
Ethylbenzene	32.7	1.0	"	33.1	ND	99.0	29-160			
m,p-Xylene	63.4	2.0	"	66.5	ND	95.3	20-166			
o-Xylene	33.3	1.0	"	32.8	ND	101	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		108	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.8	45-146			

Matrix Spike Dup (1412219-MSD1)		Source: 1412152-01			Prepared & Analyzed: 12/21/14					
Benzene	31.5	1.0	ug/l	33.3	ND	94.6	34-141	2.28	32	
Toluene	30.0	1.0	"	33.3	ND	90.1	27-151	0.467	25	
Ethylbenzene	33.1	1.0	"	33.1	ND	100	29-160	3.01	50	
m,p-Xylene	64.6	2.0	"	66.5	ND	97.0	20-166	2.81	36	
o-Xylene	33.5	1.0	"	32.8	ND	102	33-159	2.36	26	
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.2		109	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.6	45-146			

Summit Scientific

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Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1412219 - EPA 5030 Water MS

Matrix Spike Dup (1412219-MSD2)	Source: 1412152-02			Prepared & Analyzed: 12/21/14						
Benzene	30.9	1.0	ug/l	33.3	ND	92.6	34-141	1.06	32	
Toluene	30.0	1.0	"	33.3	ND	90.0	27-151	0.904	25	
Ethylbenzene	32.9	1.0	"	33.1	ND	99.5	29-160	0.518	50	
m,p-Xylene	64.3	2.0	"	66.5	ND	96.6	20-166	1.38	36	
o-Xylene	33.4	1.0	"	32.8	ND	102	33-159	0.390	26	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.2		106	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.7	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joseph J Egry IV For Paul Shrewsbury, President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/23/14 15:39

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A handwritten signature in black ink, appearing to read 'Joseph J Egry IV'.

Joseph J Egry IV For Paul Shrewsbury, President

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 02, 2015

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Maxey 2, 33, 34, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 09/25/15 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "M Clements", with a stylized flourish at the end.

Michelle Clements For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	1509248-01	Water	09/25/15 11:03	09/25/15 17:00
BH02R	1509248-02	Water	09/25/15 10:47	09/25/15 17:00
BH03R	1509248-03	Water	09/25/15 10:48	09/25/15 17:00
BH04R	1509248-04	Water	09/25/15 10:46	09/25/15 17:00
BH05R	1509248-05	Water	09/25/15 10:47	09/25/15 17:00
BH06R	1509248-06	Water	09/25/15 11:05	09/25/15 17:00
BH07	1509248-07	Water	09/25/15 10:55	09/25/15 17:00
BH08	1509248-08	Water	09/25/15 10:57	09/25/15 17:00
BH09	1509248-09	Water	09/25/15 11:02	09/25/15 17:00
BH10	1509248-10	Water	09/25/15 10:54	09/25/15 17:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

Summit Scientific

1509248

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Client: PDC Energy

Page 1 of 1

Address:

Project Manager: Mark Longhurst

City/State/Zip:

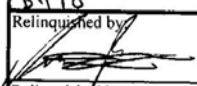

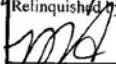

E-Mail: Mark.Longhurst@PDCE.com

Phone: Fax:

Project Name: Maxey 2, 33, 34, 44-24, 24D

Sampler Name: M.H.P., Kate F., J. C., Daniel C.

Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX (B26C)			
BH01R	9/25/15	11:03	3	x				x							
BH02R		10:47	1												
BH03R		10:48	1												
BH04R		10:46	1												
BH05R		10:47	1												
BH06R		11:05	1												
BH07		10:55	1												
BH08		10:57	1												
BH09		11:02	1												
BH10		10:54	1												
Relinquished by:  Date/Time: 9/25/15 16:00				Received by:  Date/Time: 9/25/15 1700				Turn Around Time (Check)				Notes: on ice			
Relinquished by:  Date/Time: 9/25/15 1740				Received by:  Date/Time: 9/25 1740				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>							
								24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>							
Relinquished by:				Received in Lab by:				Sample Integrity:							
								Temperature Upon Receipt: 2.5°C							
								Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No							

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH01R
1509248-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **09/25/15 11:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		91.9 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH02R
1509248-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **09/25/15 10:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		109 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		95.9 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %		45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH03R
1509248-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		110 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH04R
1509248-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 10:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		119 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH05R
1509248-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	590	100		ug/l	100	1509267	09/30/15	09/30/15	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	130	1.0		"	"	"	"	"	"	
Xylenes (total)	300	1.0		"	"	"	"	"	"	

Date Sampled: **09/25/15 10:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		118 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH06R
1509248-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		123 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.1 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH07
1509248-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		120 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH08
1509248-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.1	1.0		ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **09/25/15 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %		45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH09
1509248-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	9.7	1.0		ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	3.0	1.0		"	"	"	"	"	"	
Ethylbenzene	45	1.0		"	"	"	"	"	"	
Xylenes (total)	120	1.0		"	"	"	"	"	"	

Date Sampled: **09/25/15 11:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		119 %		37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %		45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %		45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

BH10
1509248-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509267	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		154 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1509267 - EPA 5030 Water MS

Blank (1509267-BLK1)

Prepared & Analyzed: 09/29/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.2	113	37-154				
Surrogate: Toluene-d8	13.1		"	13.3	98.0	45-149				
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3	93.6	45-146				

LCS (1509267-BS1)

Prepared & Analyzed: 09/29/15

Benzene	29.8	1.0	ug/l	33.3	89.5	51-132				
Toluene	30.6	1.0	"	33.3	91.8	51-138				
Ethylbenzene	38.7	1.0	"	33.1	117	58-146				
m,p-Xylene	77.8	2.0	"	66.5	117	57-144				
o-Xylene	34.8	1.0	"	32.8	106	53-146				
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.2	118	37-154				
Surrogate: Toluene-d8	13.4		"	13.3	101	45-149				
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3	94.8	45-146				

Matrix Spike (1509267-MS1)

Source: 1509247-01

Prepared & Analyzed: 09/29/15

Benzene	29.1	1.0	ug/l	33.3	ND	87.2	34-141			
Toluene	28.2	1.0	"	33.3	ND	84.6	27-151			
Ethylbenzene	36.2	1.0	"	33.1	ND	109	29-160			
m,p-Xylene	69.9	2.0	"	66.5	ND	105	20-166			
o-Xylene	32.6	1.0	"	32.8	ND	99.5	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.2	109	37-154				
Surrogate: Toluene-d8	12.4		"	13.3	93.2	45-149				
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3	92.5	45-146				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1509267 - EPA 5030 Water MS

Matrix Spike Dup (1509267-MSD1)	Source: 1509247-01			Prepared & Analyzed: 09/29/15						
Benzene	30.2	1.0	ug/l	33.3	ND	90.6	34-141	3.81	32	
Toluene	30.3	1.0	"	33.3	ND	90.8	27-151	7.11	25	
Ethylbenzene	38.2	1.0	"	33.1	ND	115	29-160	5.33	50	
m,p-Xylene	78.0	2.0	"	66.5	ND	117	20-166	11.0	36	
o-Xylene	34.4	1.0	"	32.8	ND	105	33-159	5.31	26	
Surrogate: 1,2-Dichloroethane-d4	16.5		"	13.2		125	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.5	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:53

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

A handwritten signature in black ink, appearing to read 'M. Clement'.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 13, 2015

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 34, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 02/12/15 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/13/15 01:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5'	1502089-01	Soil	02/12/15 00:00	02/12/15 15:55
SS02@5'	1502089-02	Soil	02/12/15 00:00	02/12/15 15:55
SS03@5'	1502089-03	Soil	02/12/15 00:00	02/12/15 15:55
SS04@5'	1502089-04	Soil	02/12/15 00:00	02/12/15 15:55

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/13/15 01:43

Summit Scientific *1502089*

S₂

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: *PDC Energy*

Project Manager: *Brandon Bruns*

Address:

E-Mail: *brandon.bruns@pdce.com*

City/State/Zip:

Phone:

Fax:

Project Name: *Maxey 2, 33, 43, 44-24 + 24D*

Sampler Name:

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTX	TPH	DDO/CAO	NAP	
1	<i>SS01 @ 5'</i>	<i>1/12/15</i>		1			X			X			X	X	X		
2	<i>SS02 @ 5'</i>			1			X			X			X	X	X		
3	<i>SS03 @ 5'</i>			1			X			X			X	X	X		
4	<i>SS04 @ 5'</i>	<i>X</i>		1			X			X			X	X	X		
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <i>[Signature]</i>	Date/Time: <i>1/12/15 15:55</i>	Received by: <i>[Signature]</i>	Date/Time: <i>2-12-15 3:55</i>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
				24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <i>6.8°C</i>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

SS01@5'
1502089-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/12/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	1900	50	mg/kg	1	1502146	02/12/15	02/12/15	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 02/12/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/12/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	2.6	0.10	mg/kg	10	1502147	02/12/15	02/12/15	EPA 8260B	
Benzene	0.80	0.020	"	"	"	"	"	"	
Toluene	11	0.050	"	"	"	"	"	"	E
Ethylbenzene	13	0.050	"	"	"	"	"	"	E
Xylenes (total)	140	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	4200	5.0	"	"	"	"	"	"	E

Date Sampled: 02/12/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		745 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		400 %	21-167		"	"	"	"	S-02

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

SS02@5'
1502089-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1502146	02/12/15	02/13/15	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502147	02/12/15	02/12/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	13	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

SS03@5'
1502089-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1502146	02/12/15	02/13/15	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502147	02/12/15	02/12/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.1 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

SS04@5'
1502089-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1502146	02/12/15	02/13/15	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502147	02/12/15	02/12/15	EPA 8260B	
Benzene	0.0085	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.017	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.1	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502146 - EPA 3550A

Blank (1502146-BLK1)

Prepared & Analyzed: 02/12/15

C10-C28 (TEPH-DRO)	ND	50	mg/kg
C28-C36 (TEPH-ORO)	ND	50	"

Surrogate: o-Terphenyl	12.9	"	12.2	106	30-150
------------------------	------	---	------	-----	--------

LCS (1502146-BS1)

Prepared & Analyzed: 02/12/15

C10-C28 (TEPH-DRO)	461	50	mg/kg	501	92.0	73-134
Surrogate: o-Terphenyl	12.0	"	12.2	98.4	30-150	

Matrix Spike (1502146-MS1)

Source: 1502087-01

Prepared & Analyzed: 02/12/15

C10-C28 (TEPH-DRO)	435	45	mg/kg	455	ND	95.6	50-148
Surrogate: o-Terphenyl	11.6	"	11.1	105	30-150		

Matrix Spike Dup (1502146-MSD1)

Source: 1502087-01

Prepared & Analyzed: 02/12/15

C10-C28 (TEPH-DRO)	428	50	mg/kg	473	ND	90.5	50-148	1.78	13
Surrogate: o-Terphenyl	11.4	"	11.5	99.2	30-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/13/15 01:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502147 - EPA 5030 Soil MS

Blank (1502147-BLK1)

Prepared & Analyzed: 02/12/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0382</i>		<i>"</i>	<i>0.0396</i>		<i>96.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>21-167</i>			

LCS (1502147-BS1)

Prepared & Analyzed: 02/12/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0999	0.0020	"	0.100		99.9	58-130			
Toluene	0.104	0.0050	"	0.100		104	61-134			
Ethylbenzene	0.0996	0.0050	"	0.0992		100	74-139			
m,p-Xylene	0.200	0.010	"	0.200		100	73-137			
o-Xylene	0.101	0.0050	"	0.0984		102	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0396</i>		<i>98.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>21-167</i>			

Matrix Spike (1502147-MS1)

Source: 1502087-01

Prepared & Analyzed: 02/12/15

Naphthalene	0.00352	0.010	mg/kg		0.00352		10-158			
Benzene	0.0922	0.0020	"	0.0947	ND	97.4	30-131			
Toluene	0.0942	0.0050	"	0.0947	ND	99.5	30-134			
Ethylbenzene	0.0928	0.0050	"	0.0939	ND	98.8	22-153			
m,p-Xylene	0.186	0.010	"	0.189	ND	98.2	10-159			
o-Xylene	0.0956	0.0050	"	0.0932	ND	103	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0387</i>		<i>"</i>	<i>0.0375</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0372</i>		<i>"</i>	<i>0.0379</i>		<i>98.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0379</i>		<i>96.1</i>	<i>21-167</i>			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 01:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502147 - EPA 5030 Soil MS

Matrix Spike Dup (1502147-MSD1)		Source: 1502087-01			Prepared & Analyzed: 02/12/15					
Naphthalene	0.00306	0.010	mg/kg		0.00352		10-158	14.2	42	
Benzene	0.0932	0.0020	"	0.0943	ND	98.8	30-131	0.998	34	
Toluene	0.0953	0.0050	"	0.0943	ND	101	30-134	1.15	30	
Ethylbenzene	0.0952	0.0050	"	0.0936	ND	102	22-153	2.46	24	
m,p-Xylene	0.189	0.010	"	0.188	ND	101	10-159	1.97	68	
o-Xylene	0.0979	0.0050	"	0.0928	ND	105	31-151	2.38	38	
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0374		103	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0377		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0377		97.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/13/15 01:43

Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 13, 2015

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 34, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 02/12/15 15:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 00:14

LD-SS01
1502090-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/15 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	1502146	02/12/15	02/12/15	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/12/15 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/15 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1502147	02/12/15	02/12/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/15 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 00:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502146 - EPA 3550A

Blank (1502146-BLK1)				Prepared & Analyzed: 02/12/15						
C10-C28 (TEPH-DRO)	ND	50	mg/kg							
C28-C36 (TEPH-ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.9		"	12.2		106	30-150			
LCS (1502146-BS1)				Prepared & Analyzed: 02/12/15						
C10-C28 (TEPH-DRO)	461	50	mg/kg	501		92.0	73-134			
Surrogate: o-Terphenyl	12.0		"	12.2		98.4	30-150			
Matrix Spike (1502146-MS1)				Source: 1502087-01		Prepared & Analyzed: 02/12/15				
C10-C28 (TEPH-DRO)	435	45	mg/kg	455	ND	95.6	50-148			
Surrogate: o-Terphenyl	11.6		"	11.1		105	30-150			
Matrix Spike Dup (1502146-MSD1)				Source: 1502087-01		Prepared & Analyzed: 02/12/15				
C10-C28 (TEPH-DRO)	428	50	mg/kg	473	ND	90.5	50-148	1.78	13	
Surrogate: o-Terphenyl	11.4		"	11.5		99.2	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 00:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502147 - EPA 5030 Soil MS

Blank (1502147-BLK1)

Prepared & Analyzed: 02/12/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0396	96.4	23-173				
Surrogate: Toluene-d8	0.0403		"	0.0400	101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400	99.6	21-167				

LCS (1502147-BS1)

Prepared & Analyzed: 02/12/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0999	0.0020	"	0.100	99.9	58-130				
Toluene	0.104	0.0050	"	0.100	104	61-134				
Ethylbenzene	0.0996	0.0050	"	0.0992	100	74-139				
m,p-Xylene	0.200	0.010	"	0.200	100	73-137				
o-Xylene	0.101	0.0050	"	0.0984	102	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0396	98.6	23-173				
Surrogate: Toluene-d8	0.0406		"	0.0400	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400	96.8	21-167				

Matrix Spike (1502147-MS1)

Source: 1502087-01

Prepared & Analyzed: 02/12/15

Naphthalene	0.00352	0.010	mg/kg	0.00352		10-158				
Benzene	0.0922	0.0020	"	0.0947	ND	97.4	30-131			
Toluene	0.0942	0.0050	"	0.0947	ND	99.5	30-134			
Ethylbenzene	0.0928	0.0050	"	0.0939	ND	98.8	22-153			
m,p-Xylene	0.186	0.010	"	0.189	ND	98.2	10-159			
o-Xylene	0.0956	0.0050	"	0.0932	ND	103	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0375		103	23-173			
Surrogate: Toluene-d8	0.0372		"	0.0379		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0379		96.1	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/13/15 00:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502147 - EPA 5030 Soil MS

Matrix Spike Dup (1502147-MSD1)		Source: 1502087-01			Prepared & Analyzed: 02/12/15					
Naphthalene	0.00306	0.010	mg/kg		0.00352		10-158	14.2	42	
Benzene	0.0932	0.0020	"	0.0943	ND	98.8	30-131	0.998	34	
Toluene	0.0953	0.0050	"	0.0943	ND	101	30-134	1.15	30	
Ethylbenzene	0.0952	0.0050	"	0.0936	ND	102	22-153	2.46	24	
m,p-Xylene	0.189	0.010	"	0.188	ND	101	10-159	1.97	68	
o-Xylene	0.0979	0.0050	"	0.0928	ND	105	31-151	2.38	38	
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0374		103	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0377		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0377		97.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/13/15 00:14

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 12, 2015

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2, 33, 34, 43, 44-24, 24D

Enclosed are the results of analyses for samples received by Summit Scientific on 02/11/15 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/12/15 06:33

S-GW01
1502079-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/11/15 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	90	1.0	ug/l	1	1502132	02/11/15	02/11/15	EPA 8260B	
Toluene	130	1.0	"	"	"	"	"	"	
Ethylbenzene	100	1.0	"	"	"	"	"	"	
Xylenes (total)	1700	100	"	100	"	"	"	"	

Date Sampled: 02/11/15 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/12/15 06:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502132 - EPA 5030 Water MS

Blank (1502132-BLK1)

Prepared & Analyzed: 02/11/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.2	101	37-154				
Surrogate: Toluene-d8	12.9		"	13.3	96.6	45-149				
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3	103	45-146				

LCS (1502132-BS1)

Prepared & Analyzed: 02/11/15

Benzene	31.3	1.0	ug/l	33.3	93.8	51-132				
Toluene	29.2	1.0	"	33.3	87.6	51-138				
Ethylbenzene	30.2	1.0	"	33.1	91.3	58-146				
m,p-Xylene	61.6	2.0	"	66.5	92.7	57-144				
o-Xylene	29.5	1.0	"	32.8	89.8	53-146				
Xylenes (total)	91.1	1.0	"			30-150				
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.2	107	37-154				
Surrogate: Toluene-d8	12.8		"	13.3	96.0	45-149				
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3	99.5	45-146				

Matrix Spike (1502132-MS1)

Source: 1502070-01

Prepared & Analyzed: 02/11/15

Benzene	31.8	1.0	ug/l	33.3	ND	95.6	34-141			
Toluene	29.6	1.0	"	33.3	ND	88.8	27-151			
Ethylbenzene	31.3	1.0	"	33.1	ND	94.5	29-160			
m,p-Xylene	62.6	2.0	"	66.5	ND	94.0	20-166			
o-Xylene	30.4	1.0	"	32.8	ND	92.6	33-159			
Xylenes (total)	92.9	1.0	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.2	112	37-154				
Surrogate: Toluene-d8	13.1		"	13.3	98.3	45-149				
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3	102	45-146				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/12/15 06:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1502132 - EPA 5030 Water MS

Matrix Spike Dup (1502132-MSD1)	Source: 1502070-01			Prepared & Analyzed: 02/11/15						
Benzene	31.7	1.0	ug/l	33.3	ND	95.1	34-141	0.504	32	
Toluene	29.1	1.0	"	33.3	ND	87.3	27-151	1.70	25	
Ethylbenzene	31.6	1.0	"	33.1	ND	95.6	29-160	1.15	50	
m,p-Xylene	62.5	2.0	"	66.5	ND	94.0	20-166	0.0640	36	
o-Xylene	29.9	1.0	"	32.8	ND	91.2	33-159	1.49	26	
Xylenes (total)	92.4	1.0	"		ND		30-150	0.529	25	
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.2		116	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2, 33, 34, 43, 44-24, 24D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/12/15 06:33

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 02, 2015

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Maxey 2,33,34,43,44-24,24D Flowline

Enclosed are the results of analyses for samples received by Summit Scientific on 09/25/15 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "M Clements", with a stylized flourish at the end.

Michelle Clements For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1509246-01	Water	09/25/15 11:23	09/25/15 17:00
BH02	1509246-02	Water	09/25/15 11:21	09/25/15 17:00
BH03	1509246-03	Water	09/25/15 11:20	09/25/15 17:00
BH04	1509246-04	Water	09/25/15 11:22	09/25/15 17:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

BH01
1509246-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1509266	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

BH02
1509246-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509266	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		121 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.1 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

BH03
1509246-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1509266	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	45-146		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

BH04
1509246-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/25/15 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1509266	09/29/15	09/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **09/25/15 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1509266 - EPA 5030 Water MS

Blank (1509266-BLK1)

Prepared & Analyzed: 09/28/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		107	37-154			
Surrogate: Toluene-d8	12.2		"	13.3		91.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.7	45-146			

LCS (1509266-BS1)

Prepared & Analyzed: 09/28/15

Benzene	29.0	1.0	ug/l	33.3		86.9	51-132			
Toluene	28.6	1.0	"	33.3		85.9	51-138			
Ethylbenzene	35.2	1.0	"	33.1		106	58-146			
m,p-Xylene	67.1	2.0	"	66.5		101	57-144			
o-Xylene	31.4	1.0	"	32.8		95.6	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.2		107	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.2	45-149			
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.1	45-146			

Matrix Spike (1509266-MS1)

Source: 1509245-01

Prepared & Analyzed: 09/28/15

Benzene	29.7	1.0	ug/l	33.3	ND	89.0	34-141			
Toluene	28.5	1.0	"	33.3	ND	85.5	27-151			
Ethylbenzene	37.9	1.0	"	33.1	ND	115	29-160			
m,p-Xylene	76.7	2.0	"	66.5	ND	115	20-166			
o-Xylene	35.9	1.0	"	32.8	ND	109	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.2		112	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.3	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1509266 - EPA 5030 Water MS

Matrix Spike Dup (1509266-MSD1)	Source: 1509245-01			Prepared & Analyzed: 09/28/15						
Benzene	40.2	1.0	ug/l	33.3	ND	121	34-141	30.2	32	
Toluene	29.4	1.0	"	33.3	ND	88.1	27-151	3.04	25	
Ethylbenzene	36.7	1.0	"	33.1	ND	111	29-160	3.16	50	
m,p-Xylene	69.7	2.0	"	66.5	ND	105	20-166	9.45	36	
o-Xylene	32.6	1.0	"	32.8	ND	99.3	33-159	9.67	26	
Surrogate: 1,2-Dichloroethane-d4	15.7		"	13.2		119	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Maxey 2,33,34,43,44-24,24D Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/02/15 14:43

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.