



2057 Commerce Drive
Midland, TX 79703

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www.trcsolutions.com

June 11, 2018

Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, NM 88210

Shelly Tucker
Carlsbad Field Office
United States Department of the Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220

Re: Remediation Workplan and Backfill Request
Mewbourne Forty Niner Ridge Unit 103H (2RP-4748)
GPS: N 32.28414° W -103.86346°
Unit Letter "O", Section 22, Township 23 South, Range 30 East
Eddy County, New Mexico

Dear Mr. Bratcher,

TRC Environmental Corporation (TRC) has prepared the following "Remediation Workplan and Backfill Request" on behalf of Plains Pipeline, L.P. (Plains), in regard to the Mewbourne Forty Niner Ridge Unit 103H crude oil release site (2RP-4748). The release site is located approximately fourteen (14) miles East of Loving in Eddy County, New Mexico, in Unit Letter "O", Section 22, Township 23 South, Range 30 East. The GPS coordinates for the site are N 32.28414° and W -103.86346°. The affected property is located on Bureau of Land Management (BLM) land. A "Site Location Map" is provided as Attachment #1.

On May 14, 2018, a release occurred at the Mewbourne Oil Company's Forty Niner Ridge Unit 103H production facility. The release was attributed to a valve on the load line being left in the open position, resulting in the release of approximately ten (10) barrels (bbls) of crude oil, with zero (0) bbls being recovered. The release was confined to within the perimeter of the caliche well pad.

A reference map utilized by the New Mexico Oil Conservation Division (NMOCD) indicated groundwater should be encountered at approximately seventy-five (75) ft. below ground surface (bgs). No surface waters or water wells were observed within one thousand (1,000) ft. of the release site.

Based on the NMOCD Site Classification criteria, the Recommended Remediation Action Levels (RRAL) are 10 mg/kg for benzene, 50 mg/kg for benzene, toluene, ethylbenzene and xylene (BTEX), 1,000 mg/kg for total petroleum hydrocarbons (TPH) and 600 mg/kg for chloride concentrations.

Summary of Field Activities

On May 23, 2018, remediation activities commenced at the release site. Impacted soil within the release margins was excavated and stockpiled on-site, atop an impermeable liner, pending final disposition. The floor and sidewalls of the excavation were advanced until laboratory analytical results indicated concentrations of BTEX, TPH and chloride were below the NMOCD RRAL.

On May 24, 2018, TRC collected sixteen (16) confirmation soil samples from the floor and sidewalls of the excavated area and submitted them to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than the NMOCD RRAL in each of the submitted soil samples. A "Site & Sample Location Map" is provided as Attachment #2. A "Soil Chemistry Table" is provided as Attachment #3.

Backfill Request

Based on laboratory analytical results and field activities conducted to date, TRC requests permission to backfill the excavated area with locally-sourced, non-impacted "like" material. Excavation backfill will be compacted and contoured to meet the needs of the facility.

Upon completion of remediation activities, a "Remediation Summary and Soil Closure Request" will be prepared summarizing field activities and laboratory analytical results from confirmation soil samples. If you have any questions or need any additional information, please feel free to contact Zach Conder or Amber Groves by phone or email.

Respectfully,



Joel Lowry
TRC Environmental Corporation



Zach Conder
TRC Environmental Corporation

Attachments:

Figure 1 – Site Location Map

Figure 2 – Site & Sample Map

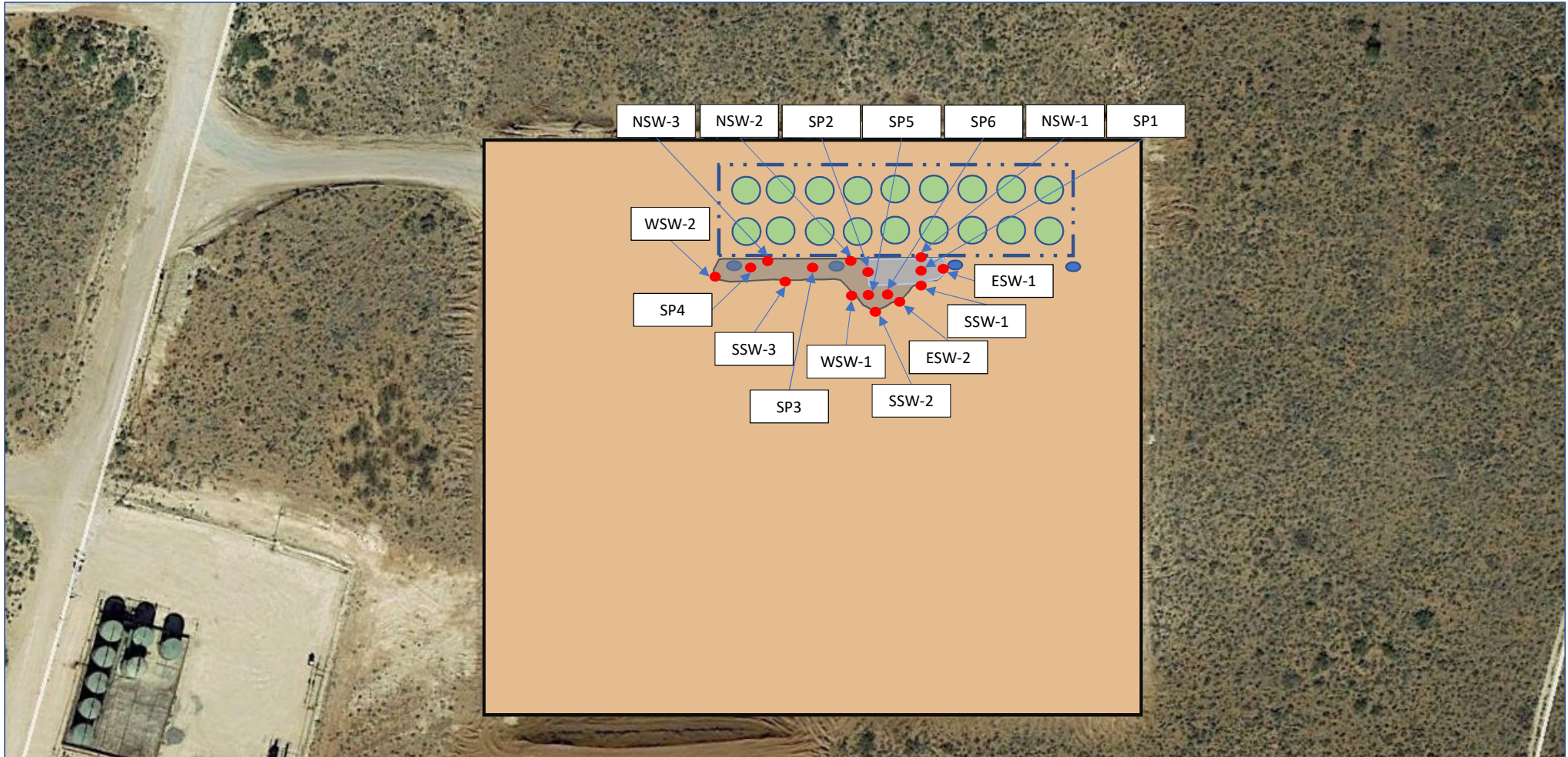
Table 1 – Concentrations of Benzene, BTEX, TPH and Chloride in Soil

Photographic Log

Release Notification and Corrective Action (Form C-141)

cc: Camille Bryant
Plains Pipeline, L.P.
505 North Big Spring, Suite 600
Midland, TX 79701

File



LEGEND:

- Sample Locations
- Caliche Pad
- Excavated Area 2 Feet

- Excavated Area 3 Feet
- Fence
- Holding Tanks
- Transfer Connection Point

Figure 2
 Site & Sample Location Map
 Plains Pipeline, LP
 Mewbourne Forty Niner Ridge Unit 103H
 Eddy Co, New Mexico

Scale 1" = ~100'

Drafted by: BC	Checked by: JL
Draft: June 27, 2018	
Lat. N 32.28414 Long. W -103.86346	
UL "O", Sec. 22, T23S,3033E	
TRC Proj. No.: 306159	



2057 Commerce Drive
 Midland, Texas 79703
 432.520.7720

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
MEWBOURNE FORTY NINER RIDGE UNIT 103H
PLAINS PIPELINE, L.P.
EDDY COUNTY, NM
NMOCD REF. No. 2RP-4748

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M				E300 CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
NSW-1	5/24/2018	1.5'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	15.1
NSW-2	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	18.4
NSW-3	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	45.6	11.2	56.8	10.2
ESW-1	5/24/2018	1.5'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.8	<10.0	15.8	41.5
ESW-2	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0
WSW-1	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	220	41.7	261.7	<10.0
WSW-2	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0
SSW-1	5/24/2018	1.5'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0
SSW-2	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0
SSW-3	5/24/2018	1'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	14.4
SP-1 @ 3'	5/24/2018	3'	In-Situ	<0.050	<0.050	<0.050	0.203	<0.300	<10.0	19.7	<10.0	19.7	<10.0
SP-2 @ 2'	5/24/2018	2'	In-Situ	<0.050	0.1710	0.083	0.441	0.695	<10.0	<10.0	<10.0	<10.0	12.8
SP-3 @ 2'	5/24/2018	2'	In-Situ	0.132	1.1300	0.685	4.14	6.08	16.0	58.3	<10.0	74.3	15.6
SP-4 @ 2'	5/24/2018	2'	In-Situ	<0.050	0.924	0.845	4.80	6.57	26.2	213	29.2	268.4	11.1
SP-5 @ 2'	5/24/2018	2'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	26.9	<10.0	26.9	<10.0
SP-6 @ 2'	5/24/2018	2'	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	32.3	<10.0	32.3	12.6
NMOCD Regulatory Guideline				10	-	-	-	50	-	-	-	1,000	600

June 01, 2018

JOEL LOWRY

PLAINS ALL AMERICAN PIPELINE

505 NORTH BIG SPRINGS ST STE. 600

MIDLAND, TX 79701

RE: MEWBOURNE FORTY NINER RIDGE UNIT 103

Enclosed are the results of analyses for samples received by the laboratory on 05/25/18 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NSW - 1	H801449-01	Soil	24-May-18 13:10	25-May-18 15:35
NSW - 2	H801449-02	Soil	24-May-18 13:20	25-May-18 15:35
NSW - 3	H801449-03	Soil	24-May-18 13:40	25-May-18 15:35
ESW - 1	H801449-04	Soil	24-May-18 13:50	25-May-18 15:35
ESW - 2	H801449-05	Soil	24-May-18 14:00	25-May-18 15:35
WSW - 1	H801449-06	Soil	24-May-18 14:10	25-May-18 15:35
WSW - 2	H801449-07	Soil	24-May-18 14:20	25-May-18 15:35
SSW - 1	H801449-08	Soil	24-May-18 14:30	25-May-18 15:35
SSW - 2	H801449-09	Soil	24-May-18 14:40	25-May-18 15:35
SSW - 3	H801449-10	Soil	24-May-18 00:00	25-May-18 15:35
SP -1 @ 3'	H801449-11	Soil	24-May-18 08:00	25-May-18 15:35
SP -2 @ 2'	H801449-12	Soil	24-May-18 08:10	25-May-18 15:35
SP -3 @ 3'	H801449-13	Soil	24-May-18 08:20	25-May-18 15:35
SP -4 @ 3'	H801449-14	Soil	24-May-18 08:30	25-May-18 15:35
SP -5 @ 2'	H801449-15	Soil	24-May-18 08:40	25-May-18 15:35
SP -6 @ 2'	H801449-16	Soil	24-May-18 08:50	25-May-18 15:35

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

NSW - 1 H801449-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	29-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	29-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	29-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	29-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	29-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			123 %	69.8-142		8052908	MS	29-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			88.4 %	41-142		8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			85.1 %	37.6-147		8052906	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	15.1		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

NSW - 2 H801449-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			118 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			78.4 %	41-142		8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			74.9 %	37.6-147		8052906	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	18.4		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

NSW - 3 H801449-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			114 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052906	MS	30-May-18	8015B	
DRO >C10-C28*	45.6		10.0	mg/kg	1	8052906	MS	30-May-18	8015B	
EXT DRO >C28-C36	11.2		10.0	mg/kg	1	8052906	MS	30-May-18	8015B	
Surrogate: 1-Chlorooctane			93.4 %	41-142		8052906	MS	30-May-18	8015B	
Surrogate: 1-Chlorooctadecane			101 %	37.6-147		8052906	MS	30-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	10.2		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

ESW - 1 H801449-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			111 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
DRO >C10-C28*	15.8		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			85.9 %	41-142		8052906	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			82.9 %	37.6-147		8052906	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	41.5		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

ESW - 2 H801449-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			112 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052906	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			84.0 %	41-142		8052906	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			81.5 %	37.6-147		8052906	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

WSW - 1 H801449-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			106 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	220		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	41.7		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			84.9 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			95.8 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

WSW - 2 H801449-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			107 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			81.3 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			75.0 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SSW - 1 H801449-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			80.4 %	41-142		8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			72.8 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SSW - 2

H801449-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052908	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052908	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052908	MS	30-May-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			107 %	69.8-142		8052908	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			83.4 %	41-142		8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			77.1 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SSW - 3 H801449-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8052910	MS	29-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8052910	MS	29-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8052910	MS	29-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8052910	MS	29-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8052910	MS	29-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			110 %	69.8-142		8052910	MS	29-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			85.1 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			78.8 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	14.4		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP-1 @ 3'
H801449-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	0.203		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			109 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	19.7		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			85.5 %	41-142		8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			78.1 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP -2 @ 2' H801449-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	0.171		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	0.083		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	0.441		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	0.695		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			111 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			88.8 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			82.5 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	12.8		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP -3 @ 3' H801449-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	0.132		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	1.13		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	0.685		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	4.14		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	6.08		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			125 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	16.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	58.3		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			92.6 %	41-142		8052907	MS	29-May-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			86.6 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	15.6		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP -4 @ 3' H801449-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	0.924		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	0.845		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	4.80		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	6.57		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			130 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	26.2		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	213		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	29.2		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			89.2 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			90.8 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	11.1		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP -5 @ 2' H801449-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	26.9		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			84.8 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			79.9 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

SP -6 @ 2'
H801449-16 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8053002	MS	30-May-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8053002	MS	30-May-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8053002	MS	30-May-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	69.8-142		8053002	MS	30-May-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
DRO >C10-C28*	32.3		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctane			76.8 %	41-142		8052907	MS	29-May-18	8015B	
Surrogate: 1-Chlorooctadecane			75.0 %	37.6-147		8052907	MS	29-May-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	12.6		10.0	mg/kg wet	10	B805216	AES	31-May-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 8052908 - Volatiles

Blank (8052908-BLK1)

Prepared & Analyzed: 29-May-18

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						
Surrogate: 4-Bromofluorobenzene (PID)	0.106		mg/kg	0.100		106	69.8-142		

LCS (8052908-BS1)

Prepared & Analyzed: 29-May-18

Benzene	1.87	0.050	mg/kg	2.00		93.5	74.5-124		
Toluene	1.85	0.050	mg/kg	2.00		92.7	78.8-122		
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.5	78.6-122		
Total Xylenes	5.74	0.150	mg/kg	6.00		95.7	79.7-123		
Surrogate: 4-Bromofluorobenzene (PID)	0.103		mg/kg	0.100		103	69.8-142		

LCS Dup (8052908-BS1)

Prepared & Analyzed: 29-May-18

Benzene	1.80	0.050	mg/kg	2.00		90.2	74.5-124	3.60	15.2
Toluene	1.80	0.050	mg/kg	2.00		90.0	78.8-122	2.94	15.1
Ethylbenzene	1.77	0.050	mg/kg	2.00		88.6	78.6-122	4.30	15.4
Total Xylenes	5.47	0.150	mg/kg	6.00		91.2	79.7-123	4.85	15.2
Surrogate: 4-Bromofluorobenzene (PID)	0.105		mg/kg	0.100		105	69.8-142		

Batch 8052910 - Volatiles

Blank (8052910-BLK1)

Prepared & Analyzed: 29-May-18

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						
Surrogate: 4-Bromofluorobenzene (PID)	0.111		mg/kg	0.100		111	69.8-142		

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8052910 - Volatiles

LCS (8052910-BS1)

Prepared & Analyzed: 29-May-18

Benzene	2.27	0.050	mg/kg	2.00		114	74.5-124			
Toluene	2.30	0.050	mg/kg	2.00		115	78.8-122			
Ethylbenzene	2.34	0.050	mg/kg	2.00		117	78.6-122			
Total Xylenes	6.86	0.150	mg/kg	6.00		114	79.7-123			
Surrogate: 4-Bromofluorobenzene (PID)	0.103		mg/kg	0.100		103	69.8-142			

LCS Dup (8052910-BS1)

Prepared & Analyzed: 29-May-18

Benzene	2.23	0.050	mg/kg	2.00		112	74.5-124	1.85	15.2	
Toluene	2.29	0.050	mg/kg	2.00		115	78.8-122	0.232	15.1	
Ethylbenzene	2.33	0.050	mg/kg	2.00		116	78.6-122	0.359	15.4	
Total Xylenes	6.82	0.150	mg/kg	6.00		114	79.7-123	0.572	15.2	
Surrogate: 4-Bromofluorobenzene (PID)	0.108		mg/kg	0.100		108	69.8-142			

Batch 8053002 - Volatiles

Blank (8053002-BLK1)

Prepared & Analyzed: 30-May-18

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.107		mg/kg	0.100		107	69.8-142			

LCS (8053002-BS1)

Prepared & Analyzed: 30-May-18

Benzene	1.89	0.050	mg/kg	2.00		94.4	74.5-124			
Toluene	1.95	0.050	mg/kg	2.00		97.3	78.8-122			
Ethylbenzene	1.97	0.050	mg/kg	2.00		98.6	78.6-122			
Total Xylenes	5.77	0.150	mg/kg	6.00		96.1	79.7-123			
Surrogate: 4-Bromofluorobenzene (PID)	0.109		mg/kg	0.100		109	69.8-142			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8053002 - Volatiles

LCS Dup (8053002-BSD1)

Prepared & Analyzed: 30-May-18

Benzene	1.93	0.050	mg/kg	2.00		96.5	74.5-124	2.20	15.2	
Toluene	1.99	0.050	mg/kg	2.00		99.7	78.8-122	2.47	15.1	
Ethylbenzene	2.03	0.050	mg/kg	2.00		101	78.6-122	2.70	15.4	
Total Xylenes	5.92	0.150	mg/kg	6.00		98.7	79.7-123	2.66	15.2	
Surrogate: 4-Bromofluorobenzene (PID)	0.109		mg/kg	0.100		109	69.8-142			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8052906 - General Prep - Organics

Blank (8052906-BLK1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	58.9		mg/kg	50.0		118	41-142			
Surrogate: 1-Chlorooctadecane	65.8		mg/kg	50.0		132	37.6-147			

LCS (8052906-BS1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	222	10.0	mg/kg	200		111	76.5-133			
DRO >C10-C28	227	10.0	mg/kg	200		113	72.9-138			
Total TPH C6-C28	448	10.0	mg/kg	400		112	78-132			
Surrogate: 1-Chlorooctane	60.2		mg/kg	50.0		120	41-142			
Surrogate: 1-Chlorooctadecane	68.1		mg/kg	50.0		136	37.6-147			

LCS Dup (8052906-BSD1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	226	10.0	mg/kg	200		113	76.5-133	1.89	20.6	
DRO >C10-C28	231	10.0	mg/kg	200		115	72.9-138	1.75	20.6	
Total TPH C6-C28	457	10.0	mg/kg	400		114	78-132	1.82	18	
Surrogate: 1-Chlorooctane	60.0		mg/kg	50.0		120	41-142			
Surrogate: 1-Chlorooctadecane	66.1		mg/kg	50.0		132	37.6-147			

Batch 8052907 - General Prep - Organics

Blank (8052907-BLK1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	55.3		mg/kg	50.0		111	41-142			
Surrogate: 1-Chlorooctadecane	53.6		mg/kg	50.0		107	37.6-147			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

PLAINS ALL AMERICAN PIPELINE
505 NORTH BIG SPRINGS ST STE. 600
MIDLAND TX, 79701

Project: MEWBOURNE FORTY NINER RIDGE
Project Number: SRS PENDING
Project Manager: JOEL LOWRY
Fax To:

Reported:
01-Jun-18 16:54

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8052907 - General Prep - Organics

LCS (8052907-BS1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	199	10.0	mg/kg	200		99.5	76.5-133			
DRO >C10-C28	215	10.0	mg/kg	200		107	72.9-138			
Total TPH C6-C28	414	10.0	mg/kg	400		103	78-132			
Surrogate: 1-Chlorooctane	56.4		mg/kg	50.0		113	41-142			
Surrogate: 1-Chlorooctadecane	56.6		mg/kg	50.0		113	37.6-147			

LCS Dup (8052907-BS1)

Prepared & Analyzed: 29-May-18

GRO C6-C10	208	10.0	mg/kg	200		104	76.5-133	4.23	20.6	
DRO >C10-C28	224	10.0	mg/kg	200		112	72.9-138	4.48	20.6	
Total TPH C6-C28	432	10.0	mg/kg	400		108	78-132	4.36	18	
Surrogate: 1-Chlorooctane	57.6		mg/kg	50.0		115	41-142			
Surrogate: 1-Chlorooctadecane	57.9		mg/kg	50.0		116	37.6-147			

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 PLAINS ALL AMERICAN PIPELINE
 505 NORTH BIG SPRINGS ST STE. 600
 MIDLAND TX, 79701

 Project: MEWBOURNE FORTY NINER RIDGE
 Project Number: SRS PENDING
 Project Manager: JOEL LOWRY
 Fax To:

 Reported:
 01-Jun-18 16:54

Soluble (DI Water Extraction) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B805216 - General Prep - Wet Chem										
Blank (B805216-BLK1)										
				Prepared: 30-May-18 Analyzed: 31-May-18						
Chloride	ND	10.0	mg/kg wet							
LCS (B805216-BS1)										
				Prepared & Analyzed: 30-May-18						
Chloride	242	10.0	mg/kg wet	250		96.7	85-115			
LCS Dup (B805216-BSD1)										
				Prepared & Analyzed: 30-May-18						
Chloride	241	10.0	mg/kg wet	250		96.2	85-115	0.456	20	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: TRC Solutions

Project Manager: Joel Lowry

Address: 10 Desta Dr Suite 150E

City: Midland State: TX Zip: 79705

Phone #: 432-466-4450 Fax #:

Project #: SRS Pending Project Owner:

Project Name: Mewbourne Forty Niner Ridge Unit 103

Project Location: Eddy Co, NM

Sampler Name: Becky Griffin

BILL TO

P.O. #:

Company: Plains Marketing

Attn: Amber Groves

Address: 1911 Connie Rd

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H801449

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

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TIME

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising from this contract or tort, shall be limited to the amount paid by the client for the analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated remedies or otherwise.

Relinquished By:

Date: 3-25-18

Time: 3:35

Received By:

Signature: [Signature]

Phone Result:

Yes ☐ No ☐

Add'l Phone #:

Add'l Fax #:

REMARKS:

Relinquished By:

Date: 3-25-18

Time: 3:35

Received By:

Signature: [Signature]

Phone Result:

Yes ☐ No ☐

Add'l Phone #:

Add'l Fax #:

REMARKS:

Delivered By: (Circle One)

3.35

Corrected 3.35

Sample Condition

Cool Intact

CHECKED BY:

(Initials)

TS-#75

Signature: [Signature]

REMARKS:

1043

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: TFC Solutions

Project Manager: Joel Lowry

Address: 10 Desta Dr Suite 150E

City: Midland State: TX Zip: 79705

Phone #: 432-466-4450 Fax #:

Project #: SRS Pending Project Owner:

Project Name: Mewbourne Forty Niner Ridge Unit 103

Project Location: Eddy Co, NM

Sampler Name: Becky Griffin

BILL TO

P.O. #:

Company: Plains Marketing

Attn: Amber Groves

Address: 1911 Connie Rd

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE			OTHER :	ACID/BASE:	ICE / COOL	OTHER :						
H801449	SP-1 @ 3'		X						5-24-18	8:00	X									
11	SP-2 @ 2'		X						8:10		X									
12	SP-3 @ 2'		X						8:20		X									
13	SP-4 @ 2'		X						8:30		X									
14	SP-5 @ 2'		X						8:40		X									
15	SP-6 @ 2'		X						8:50		X									
16																				

BTEX 8021
TPH 8015 MEXT
Chloride F300

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:

Date: 5-25-18

Received By:

Relinquished By: [Signature]

Date: 5:35

Received By: [Signature]

Time:

Delivered By: (Circle One)

3.3e

Sampler - UPS - Bus - Other:

Consulted 5.25.18

Sample Condition

CHECKED BY: (Initials)

Phone Result:

Fax Result:

Yes

No

Add'l Phone #:

Add'l Fax #:

REMARKS:



Figure 1 - View of surface staining from the initial release, facing East.



Figure 2 - View of surface staining from the initial release, facing Northeast.

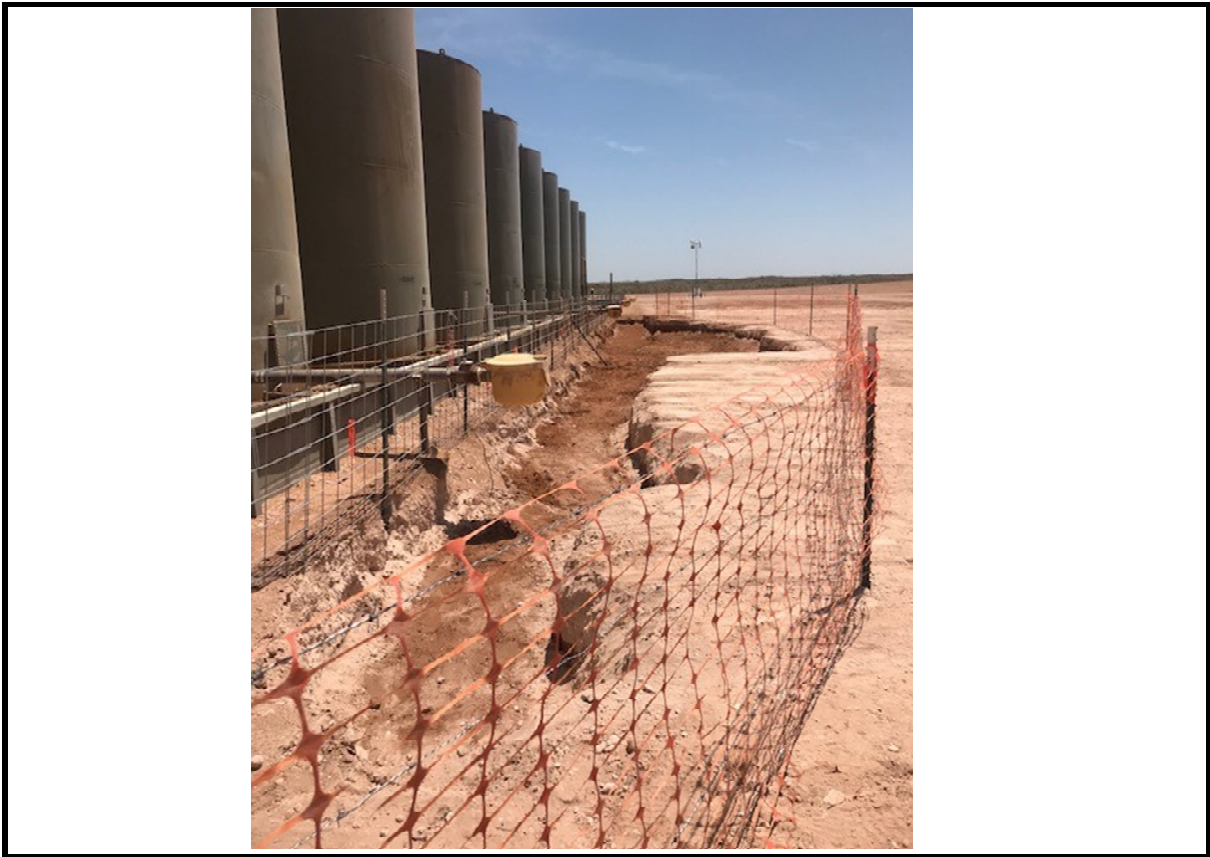


Figure 3 - View of portion of the excavated area, facing East.



Figure 4 - View of portion of the excavated area, facing West.



Figure 5 - View of portion of the excavated area, facing Northeast.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

MAY 15 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

DISTRICT II-ARTESIA O.C.D.

Submit Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

~~FAB1813733135~~
~~NAB1813733242~~

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Plains Marketing 34053	Contact Amber Groves
Address 1911 Connie Rd. Carlsbad NM 88220	Telephone No. 575-200-5517
Facility Name Mewbourne Forty Niner Ridge Unit 103H	Facility Type Tank Battery

Surface Owner BLM	Mineral Owner	API No.
-------------------	---------------	---------

LOCATION OF RELEASE

Unit Letter O	Section 22	Township 23S	Range 30E	Feet from the	North/South Line	Feet from the	East/West Line	County
------------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	--------

Latitude 32.28414800 Longitude -103.863464000 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 10 bbls	Volume Recovered 0 bbls
Source of Release Loading Header	Date and Hour of Occurrence 5/14/2018 @ 11:30 am	Date and Hour of Discovery 5/14/2018 @ 11:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher and Shelly Tucker	
By Whom? Amber Groves	Date and Hour 5/14/2018 @ 2:27 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

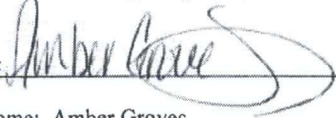

Describe Cause of Problem and Remedial Action Taken.*

A Plains driver pulled up to the load header to load. When he opened the tank valve on the load line manifold, the load line had been left open.

Describe Area Affected and Cleanup Action Taken.*

The impacted area is contained to the pad and will be remediated per current NMOCD guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Amber Groves	Approved by Environmental Specialist 	
Title: Remediation Coordinator	Approval Date: 5/15/18	Expiration Date: N/A
E-mail Address: algroves@paalp.com	Conditions of Approval: See Attached	Attached <input type="checkbox"/> 2pp-474B
Date: 5/15/2018	Phone: 575-200-5517	

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/15/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4748 has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 6/15/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Amber L Groves <ALGroves@paalp.com>
Sent: Tuesday, May 15, 2018 9:42 AM
To: Bratcher, Mike, EMNRD; Tucker, Shelly
Cc: 'zthomas@mewbourne.com'
Subject: Plains Mewbourne Forty Niner Ridge Unit 103H Initial C-141
Attachments: C-141.pdf

Good Morning, Mr. Bratcher and Ms. Tucker,

Please find attached the initial C-141 for the release that Plains had at the Mewbourne Forty Niner Ridge Unit #103H that I called in on 5/14/2018. This site is located in Unit Letter O, Section 22, Township 23S, Range 30E in Lea County. This release was attributed to the load line being left open on the loading header. The result was the release of approximately 10 barrels of crude oil with 0 barrels recovered.

Please let me know if you have any questions.

Thank you,

*Amber L. Groves
Remediation Coordinator
Plains All American
1911 Connie Road
Carlsbad, NM 88220
Office: 575-236-1033
Cell: 575-200-5517*

Attention:

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This footnote also confirms that this email message has been scanned for Viruses and Content and cleared.