Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NVV2003536983
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Amber Groves Title: Remediation Coordinator

Signature: Amber Groves Date: 8/27/2021

email: algroves@paalp.com Telephone: (575)200-5517

OCD Only

Received by: Robert Hamlet Date: 1/12/2022

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☒ Deferral Approved

Signature: Robert Hamlet Date: 1/12/2022

Form C-141
Page 5

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Oil Conservation Division

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Printed Name: Amber Groves Title: Remediation Coordinator

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OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

12600 WEST CO RD 91

MIDLAND, TX 79707

OFFICE: 432.653.4203

SOIL REMEDIATION ACTIVITIES REPORT AND RISK BASED CLOSURE/DEFERAL REQUEST

PLAINS PIPELINE, L.P.

COG CRAIG STATE #3H RELEASE

EDDY COUNTY, NM

NMOCD INCIDENT #: NVV2003536983

SRS #: 2020-004

Table of Contents

August 25, 2021

New Mexico Oil Conservation Division District 2
811 S. First Street
Artesia, New Mexico 88210

Re: **Soil Remediation Activities Report and Risk Based Closure/Deferel Request**
COG Craig State #3H Release
Unit Letter C, Section 36, Township 25S, Range 26E
GPS: N 32.092713°, W -104.249139°
Eddy County, New Mexico
NMOCD Incident #: NVV2003536983
SRS #: 2020-004

1. Introduction

Dean Companies, Inc. (Dean) is pleased to present this Soil Remediation Activities Report and Closure Request on behalf of Plains Pipeline, L.P. (Plains) to document the field soil remediation activities that were conducted at the COG Craig State # 3 H Release site. The crude oil release occurred from a LACT unit, located approximately 9.33 miles southeast of Whites City, Eddy County, New Mexico in Unit Letter C, Section 36, Township 25S, and Range 36E. The GPS coordinates for the site is N 32.092713° and W -104.249139°. A “Site Location Map” is provided as Figure 1.

2. Release Description and Response

On January 11, 2020, a crude oil release occurred at the COG Craig State #3 H and was attributed to a failure of the LACT unit air eliminator. Approximately eight (8) barrels (bbls) of crude was released with five (5) bbls recovered for a net loss of three (3) bbls of crude. The release was contained onsite adjacent to the LACT unit affecting an area measuring approximately thirty-six (36) feet (ft) in length by sixteen (16) ft in width to an estimated maximum depth of seven (7) ft below ground surface (bgs).

On January 14, 2020, Dean was assigned management oversite responsibilities for impacted soil delineation, remediation, soil sampling, site restoration, and reporting activities by Plains. On January 14, 2020, Plains submitted the initial C-141 Form to the NMOCD (Appendix A).

3. NMOCD Regulatory Limits

NMOCD assessment and cleanup levels for hydrocarbon and produced water releases are based on depth to groundwater and follow the criteria in the revised August 2018 Title 19 Chapter 15 Part 29 New Mexico Administration Code (19.15.29 NMAC) regulations. Groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and the New Mexico Bureau of Geology & Mineral Resources (NMBGMR) were accessed to determine if any registered water wells in or near Unit Letter C, Section 36, Township 25S, and Range 26E. Neither of the two databases identified any registered water wells in or near Unit Letter C, Section 36, Township 25S, and Range 26E. However, one water well (C 01368) was listed in Section 22, Township 25S, and Range 26 E approximately 2 miles northwest of the site with groundwater reported at 118 feet bgs. See Appendix B for the NMOSE water well depths near site. In addition, according to the Bureau of Land Management (BLM) the site is located in an area of high potential karst topography. See Figure 2 “Site Location Relative to Known Regional Karst Topography”. As outlined in 19.15.29.12.B. (4) NMAC, the release does not occur in referenced sensitive areas, with the nearest water body feature being Cottonwood Draw located approximately 1.0 mile north of the site. Meeting the previous criteria, the NMOCD restoration and cleanup levels for soils impacted by hydrocarbons with high karst topography is as follows:

- Chloride 600 mg/Kg
- Total TPH 100 mg/Kg
- Benzene 10 mg/Kg
- Total BTEX 50 mg/Kg

4. Soil Assessment Activities and Sample Analysis

On January 15, 2020, Dean Personnel conducted soil assessment activities at the release site. A hand auger was utilized to collect soil samples from the site to determine depth of hydrocarbon and chloride impacts. Soil samples were collected at one (1) ft. intervals to a maximum depth of seven (7) feet bgs or until refusal was encountered due to underlying limestone. Five (5) auger hole locations (AH-1 through AH-5) were installed within the LACT unit with collected soils placed into laboratory-provided sample containers, labeled, stored on ice, and transported under proper chain-of-custody documentation to Cardinal Labs of Hobbs, New Mexico (Cardinal). Samples

were analyzed for total petroleum hydrocarbons (TPH) utilizing Method SW-846 8015M, with select samples analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) utilizing Method SW-846 8021B, and chlorides utilizing Method 4500-CL-B. See Figure 3 "Site Details and Delineation Soil Sample Location Map". Benzene concentrations were below the NMOCD standards of 10 milligrams per kilogram (mg/Kg) for all samples analyzed with the exception of soil samples AH-3 @ 1 ft and AH-4 @ 1 ft, which exhibited benzene concentrations of 11.9 mg/Kg and 35.9 mg/Kg, respectively. Total BTEX were below NMOCD standards of 50 mg/Kg for all samples analyzed with the exception of soil samples AH-3 @ 1 ft and AH-4 @ 1 ft, which exhibited total BTEX concentrations of 193 mg/Kg and 442 mg/Kg, respectively. Total TPH concentrations were below the NMOCD standard of 100 mg/Kg for only one sample AH-1 @ 1 ft with a result of < 10.0 mg/Kg. The remaining samples had TPH concentrations that were above the NMOCD standards and ranged from 208 mg/Kg for soil sample AH-5 @ 1 ft to 8,430 mg/Kg in soil sample AH-4 @ 1 ft. See Table 1 for delineation analytical results. Chlorides were below NMOCD standards of 600 mg/Kg for all samples collected and analyzed. Laboratory reports containing analytical methods, results, and chain-of-custody documents are included in Appendix C. Due to the amount of existing piping and ancillary equipment onsite, further delineation utilizing mechanical means and hand excavation were not feasible at the site. In an email dated April 7, 2020, the NMOCD granted approval of a variance request to adjust the required remediation action levels to 2,500 mg/Kg TPH due to known depth to groundwater (93 ft bgs) and high total dissolved solids (TDS) of 485,000 mg/L in groundwater near the site. See site photographs documenting site conditions in Appendix D.

5. Soil Remediation and Wall Confirmation Soil Sampling

Between January 16 and February 26, 2020, Dean Personnel conducted oversite of third-party soil remediation activities at the Craig St. 3-13H Release site. Soil remediation commenced utilizing hand excavation of hydrocarbon impacted soils adjacent to the LACT unit and the onsite piping with the excavated soils stockpiled on plastic. Due to limited accessibility, the site was excavated to a maximum depth of three (3) ft bgs at which point limestone rock was encountered thus preventing further vertical hand excavation of site. Mechanical means of excavation was not feasible at the site due to the tight quarters and underground piping. Thus, additional hydrocarbon impacted soils above 100 mg/Kg TPH could not be excavated to depth and were left in-situ at the base and walls of the excavation. See Site Photographs in Appendix D. Final dimensions of the excavation were approximately thirty-six (36) ft. in length, by sixteen (16) ft. in width to a depth of

three (3) ft bgs. Approximately 100 cubic yards of soil were removed and stockpiled on plastic at the site.

On February 27, 2020, two (2) composite five (5) point bottom hole (BH-1 @ 3' and BH-2 @ 3') and four (4) composite five (5) point wall samples (North SW @ 2', East SW @ 2', South SW @ 2', and West SW @ 2') were collected within two hundred (200) square feet of each other from the bottom and four side walls and submitted for analysis of TPH, BTEX, and chlorides to Cardinal. The bottom hole analytical results were below the NMOCD standards for all samples analyzed with the exception of soil sample BH-1 @ 3', which had a TPH concentration of 2,567 mg/Kg. The BTEX analysis for the all wall samples were below NMOCD standards with the exception of soil sample West SW @ 2' which had a total BTEX concentration of 66.4 mg/Kg. In addition, the TPH for all wall samples exceeded the NMOCD standards of 100 mg/Kg for all samples analyzed and ranged from 239.8 mg/Kg for soil sample East SW @ 2' to 7,505 mg/Kg for soil sample West SW @ 2'. All chloride analysis was below NMOCD standards of 600 mg/Kg for all samples analyzed. See Figure 4 "Site Details & Confirmation Soil Sample Location Map" for soil sample locations and Table 2 for confirmation analytical results. Due to the limited accessibility, the site was not delineated for hydrocarbons.

6. Variance Request, NMOCD Responses and Additional Soil Delineation

In an email dated March 10, 2020, Plains requested a variance to the current rules, due to limited accessibility to soils (i.e. electrical piping, LACT unit, tank battery location), limited confinement of hydrocarbons to LACT unit, and non-abatable shallow (93 ft bgs) underlying groundwater with elevated total dissolved solids (485,000 mg/L) located within 3.42 miles of the site. See Appendix E for monitor well boring and groundwater analysis. In an email dated April 7, 2020, the NMOCD granted Plains approval of request to terminate via variance with remediation/delineation concentrations revised to 2,500 mg/Kg TPH along with a deferral of cleanup/remediation from 3 ft to 7 ft at time of abandonment. In addition, Plains proposed to install a 20-mil polyethylene liner throughout the entire base of the excavation to prevent further vertical migration of the impacted soil and backfill the site with materials with like source clean soils. The NMOCD stated that a polyethylene liner was not required at the site. See Appendix F for NMOCD variance approval email.

In an email dated November 19, 2020, the NMOCD denied the deferral request on the basis of peripheral delineation not being taken to the strictest Table 1 standards. See Figure G for NMOCD email denying deferral request.

To satisfy NMOCD's request, three (3) additional auger holes (AH-6, AH-7, and AH-8) were installed on December 14, 2020. Samples were collected at one (1) ft and two (2) ft bgs and submitted to the lab for analysis of TPH. Analytical results were below method detection limits for all samples analyzed. See Table 1 for analytical results and Figure 3 for sample locations. With the addition of the three auger holes and sample results, horizontal delineation to 100 mg/Kg TPH appears to have been achieved.

7. Soil Disposal and Site Restoration

Upon approval of the variance request from the NMOCD, Plains was onsite the week of May 6, 2020 to backfill the excavation with locally sourced non-impacted soils and the site brought up to grade. Approximately 100 cubic yards of hydrocarbon impacted soils were transported offsite for disposal at Lazy Ace Land Farm, LLC in Eunice, New Mexico with waste manifests available upon request. The site restoration was completed in compliance with the variance request as approved by the NMOCD.

8. Initial Closure Request and NMOCD Denial of Deferral

During the initial report submittal dated February 2, 2021, Plain's requested a deferral of the remaining hydrocarbons within the excavation. In an email dated July 6, 2021, the NMOCD denied the deferral request since the site was not fully delineated to the east of auger hole AH-5. See Appendix H for the NMOCD July 6, 2021, denial of deferral request.

After review of the initial report, it was discovered that auger hole AH-7 was initially installed to the east of AH-5, but inadvertently placed adjacent to auger hole AH-8 on the map. A revised map showing the correct location of auger hole AH-7 is found as Figure 3. As seen on Table 1, auger hole AH-7 was below method detection limits for TPH. As such, the site has been delineated to the east of auger hole AH-5.

9. Closure Request

With the additional of the three auger holes (AH-6, AH-7, and AH-8) and subsequent requisite sample results, the site appears to be horizontally delineated as requested by the NMOCD. In addition, with the completion of the backfilling of the excavation with locally sourced non-impacted soils, Plains believes the site has been remediated to within standards as approved with the variance request approved by the NMOCD on April 7, 2020. As such, Plains respectfully requests that the NMOCD consider the site for risk-based closure. A C-141 closure is attached to the front of this report.

If you have any questions, or if additional information is required, please feel free to contact Amber Groves (email: ALGroves@paalp.com, cell: 575.200.7717) of Plains or Steve Casanova (email: stevecasanova@deandigs.com, cell: 432.557.1968) or Jeff Kindley (email: jeffreykindley@deandigs.com cell: 432.230.0920) of Dean.

Sincerely,

Steve Casanova
Project Manager

Jeffrey Kindley, PG.
Professional Geologist

TABLES

Chemistry Table 1 - Delineation

Concentrations of Benzene, BTEX, Chlorides, and TPH in Soil

Plains Pipeline, L.P.

Craig St 3-13H Release

Eddy County, New Mexico

SRS #2020-004

SAMPLE INFORMATION					METHODS: EPA SW 846-8021B, 5030					METHOD: E 300	METHODS: EPA SW 846-8015M				
SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH	SAMPLE METHOD	MATRIX	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENE (mg/kg)	Total BTEX (mg/kg)	CHLORIDES (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO +DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)
Auger Hole Samples															
AH-1 @ 1 FT-R	01/15/20	1 FT	GRAB	SOIL	<0.050	<0.050	<0.050	<0.150	<0.300	352	<10.0	<10.0	<10.0	<10.0	<10.0
AH-2 @ 3 FT-R	01/15/20	3 FT	GRAB	SOIL	<0.050	<0.050	<0.050	<0.150	<0.300	48	<10.0	428	428	147	**575**
AH-3 @ 1 FT	01/15/20	1 FT	GRAB	SOIL	**11.9**	54.8	17.3	109	**193**	<16.0	1,360	4,500	5,860	773	**6,633**
AH-3 @ 3 FT	01/15/20	3 FT	GRAB	SOIL	0.099	1.31	2.63	15.2	19.2	-	390	2,910	3,300	445	**3,745**
AH-3 @ 5 FT	01/15/20	5 FT	GRAB	SOIL	-	-	-	-	-	-	743	5,430	6,173	798	**6,971**
AH-3 @ 7 FT-R	01/15/20	7 FT	GRAB	SOIL	-	-	-	-	-	-	74	573	647	84.4	**731.4**
AH-4 @ 1 FT-R	01/15/20	1 FT	GRAB	SOIL	**35.9**	123	30.3	253	**442**	<16.0	2,300	5,450	7,750	680	**8,430**
AH-5 @ 1 FT-R	01/15/20	1 FT	GRAB	SOIL	<0.050	<0.050	<0.050	0.189	<0.300	128	<10.0	178	178	30	**208**
AH-6 @ 1'	12/14/20	1 FT	GRAB	SOIL	-	-	-	-	-	-	<26.9	<26.9	<26.9	<26.9	<26.9
AH-6 @ 2'	12/14/20	2 FT	GRAB	SOIL	-	-	-	-	-	-	<29.8	<29.8	<29.8	<29.8	<29.8
AH-7 @ 1'	12/14/20	1 FT	GRAB	SOIL	-	-	-	-	-	-	<29.4	<29.4	<29.4	<29.4	<29.4
AH-7 @ 2'	12/14/20	2 FT	GRAB	SOIL	-	-	-	-	-	-	<30.1	<30.1	<30.1	<30.1	<30.1
AH-8 @ 1'	12/14/20	1 FT	GRAB	SOIL	-	-	-	-	-	-	<29.8	<29.8	<29.8	<29.8	<29.8
AH-8 @ 2'	12/14/20	2 FT	GRAB	SOIL	-	-	-	-	-	-	<31.2	<31.2	<31.2	<31.2	<31.2
NMOCD Recommended Remediation Action Level					**10**	-	-	-	**50**	**600**	**-**	**-**	**-**	**-**	**100**

Chemistry Table 2 - Confirmation

Concentrations of Benzene, BTEX, Chlorides, and TPH in Soil

Plains Pipeline, L.P.

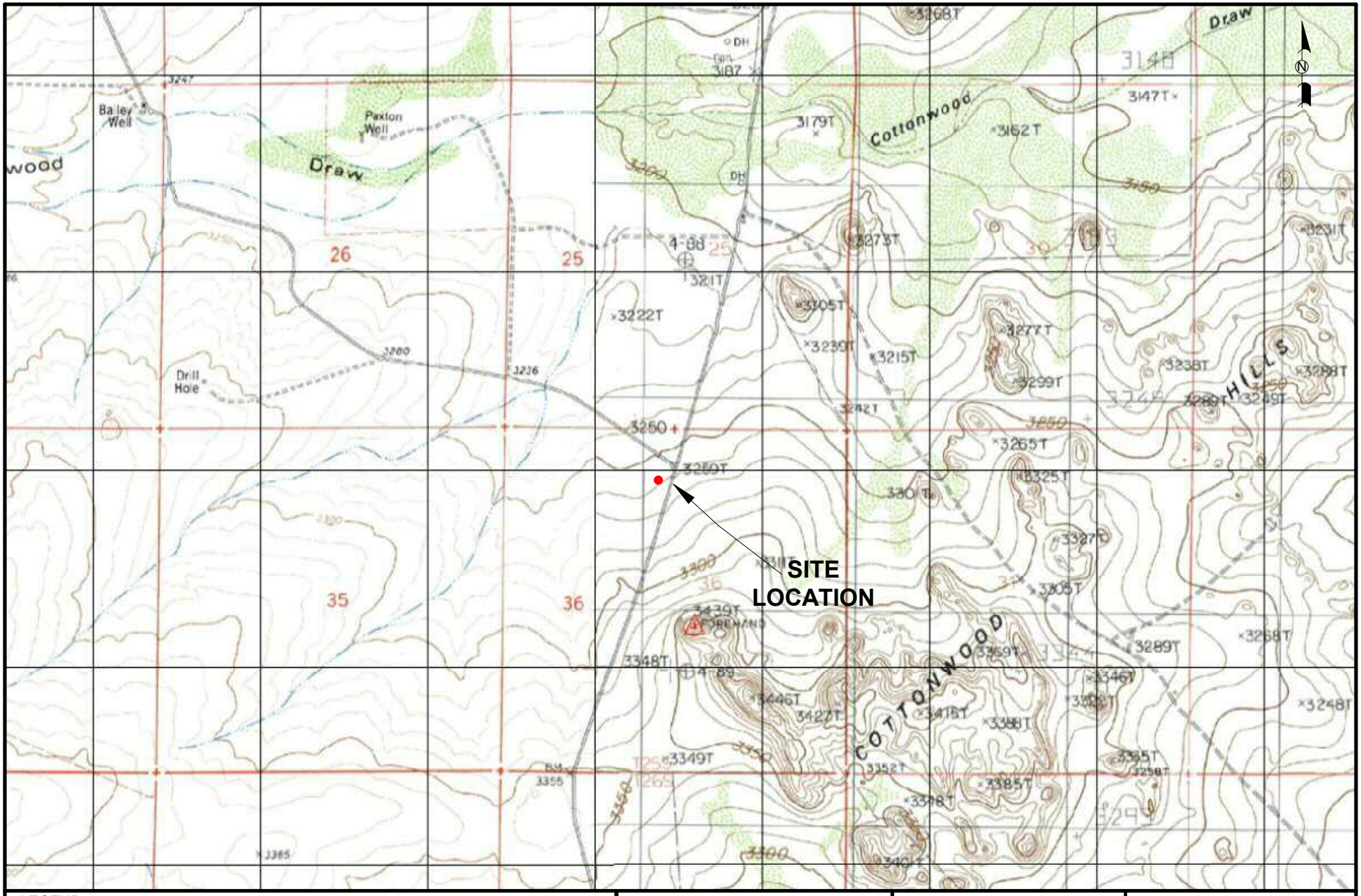
Craig St 3-13H Release

Eddy County, New Mexico

SRS #2020-004

SAMPLE INFORMATION					METHODS: EPA SW 846-8021B, 5030					METHOD: E 300	METHODS: EPA SW 846-8015M				
SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH	SAMPLE METHOD	MATRIX	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENE (mg/kg)	Total BTEX (mg/kg)	CHLORIDES (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO +DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)
Bottom Hole Samples															
BH-1 @ 3'	02/27/20	3 FT	GRAB	SOIL	0.314	1.92	2.47	16.5	21.2	16.0	231	997	1,228	111	**2,567**
BH-2 @ 3'	02/27/20	3 FT	GRAB	SOIL	<0.050	<0.050	<0.050	<0.150	<0.300	32.0	<10.0	<10.0	<10.0	<10.0	<10.0
Wall Samples															
NORTH SW @ 2'	02/27/200	2 FT	GRAB	SOIL	<0.050	0.213	0.27	2.32	2.81	32.0	34.1	403	437.1	48.5	**922.7**
EAST SW @ 2'	02/27/20	2 FT	GRAB	SOIL	<0.050	0.095	0.088	0.73	0.914	16.0	<10.0	202	202	37.8	**239.8**
SOUTH SW @ 2'	02/27/20	2 FT	GRAB	SOIL	<0.050	0.059	0.282	1.27	1.61	48.0	61.9	447	508.9	53.7	**562.6**
WEST SW @ 2'	02/27/20	2 FT	GRAB	SOIL	2.02	10.9	5.71	47.8	**66.4**	16.0	1,630	5,100	6,730	775	**7,505**
NMOCD Recommended Remediation Action Level					**10**	-	-	-	**50**	**600**	-	-	-	-	**100**

FIGURES



LEGEND:

Surface Water

Native Grassland

2000 1000 0 1000 2000

Distance in Feet

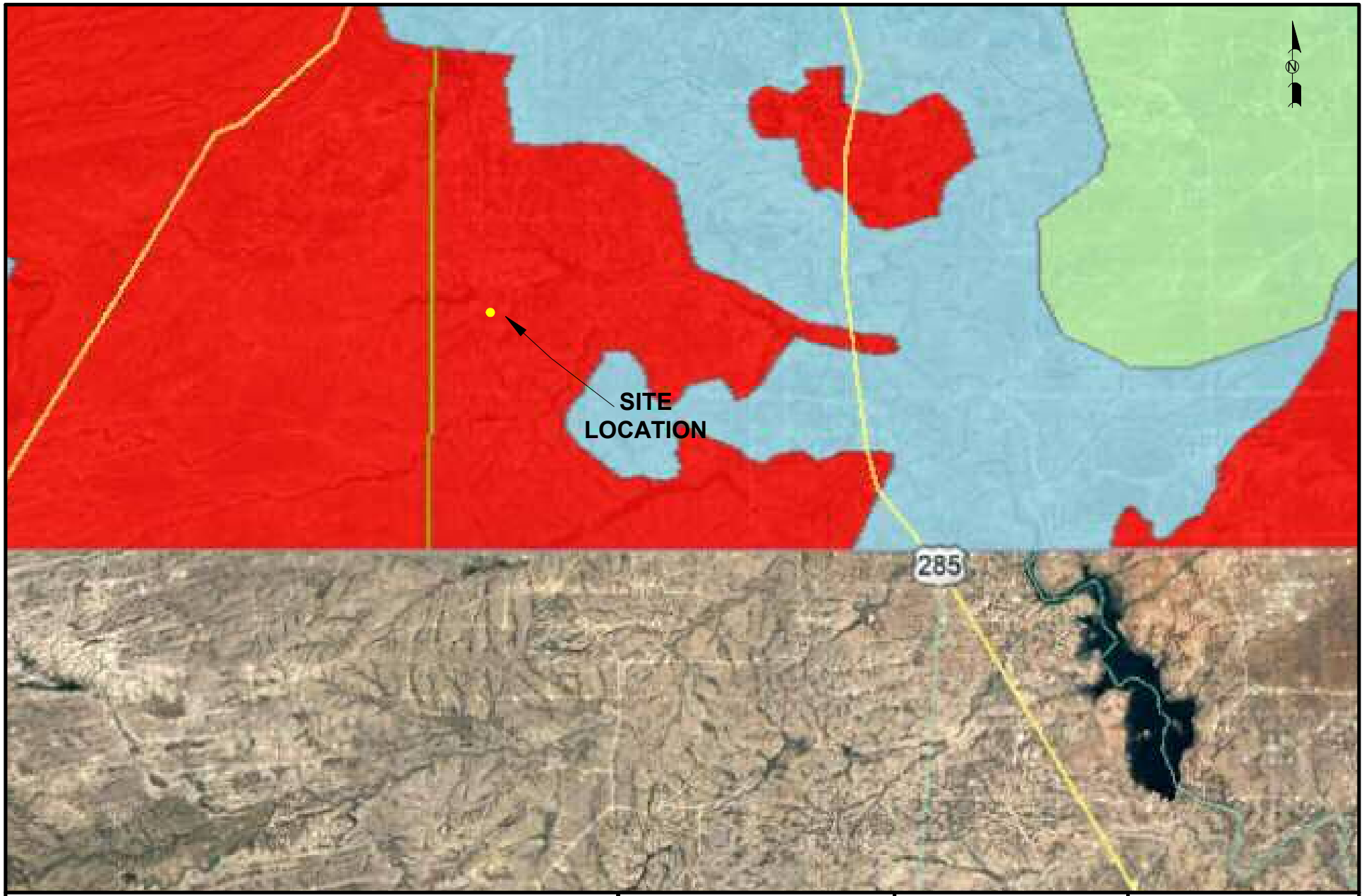
Figure 1

Site Location Map

Plains Pipeline, L.P.
Craig St 3-13H
Eddy County, NM

Scale: 1" = 2000'
CAD By: NPC
Checked By: SR
Draft: March 4, 2020
Lat. N 32.092713° Long. W 104.249139°
Dean Job #PP-2008

DEAN



LEGEND:

- Low Potential Karst Topography
- Medium Potential Karst Topography
- High Potential Karst Topography

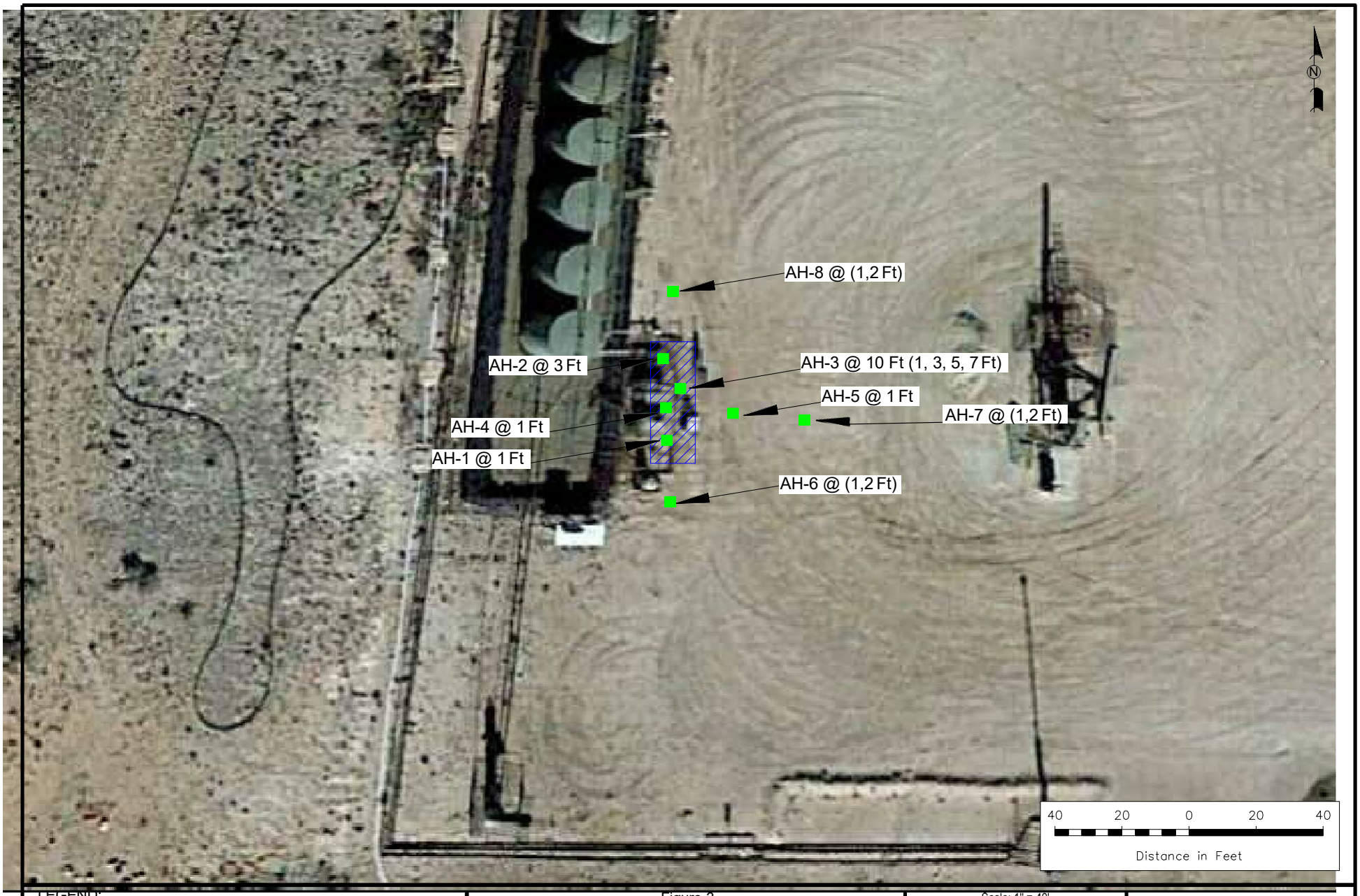
20000 10000 0 10000 20000

Distance in Feet

Figure 2
Site Location Relative to
Known Regional Karst Topography
Plains Pipeline, L.P.
Craig St 3-13H
Eddy County, NM

Scale: 1" = 20,000'
CAD By: NPC
Checked By: SR
Draft: March 4, 2020
Lat. N 32.092713° Long. W 104.249139°
Dean Job #PP-2008

DEAN



LEGEND:

- Impacted Area
- Confirmation Grab Soil Sample Location

Figure 3
Site Details & Delineation
Soil Sample Location Map
Plains Pipeline, L.P.
Craig St 3-13H
Eddy County, NM

Scale: 1" = 40'
CAD By: NPC
Checked By: JK
Draft: July 15, 2020
Lat. N 32.092521° Long. W 104.249139°
Dean Job #PP-2008

DEAN

LEGEND:

- Impacted Area
- Confirmation Grab Soil Sample Location
- Side Wall Confirmation Soil Sample Location

Figure 4
Site Details & Confirmation
Soil Sample Location Map
Plains Pipeline, L.P.
Craig St 3-13H
Eddy County, NM

Scale: 1" = 40'
CAD By: NPC
Checked By: SR
Draft: March 4, 2020
Lat. N 32.092713° Long. W 104.249139°
Dean Job #PP-2008

DEAN

APPENDIX A
NMOCD INITIAL C-141 FORM

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Plains Pipeline, L.P.	OGRID 713291
Contact Name Amber Groves	Contact Telephone 575-200-5517
Contact email algroves@paalp.com	Incident # *(assigned by OCD)*
Contact mailing address 577 US HWY 385 N Seminole, TX 79360	

Location of Release Source

Latitude 32.092713 Longitude -104.249139
(NAD 83 in decimal degrees to 5 decimal places)

Site Name COG Craig State #3H	Site Type LACT Unit
Date Release Discovered 1/11/2020 @ 9:20 AM	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
C	36	25S	26E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) 8 bbls	Volume Recovered (bbls) 5 bbls
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Failure on the LACT unit air eliminator

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Amber Groves Title: Remediation Coordinator

Signature: Amber Groves Date: 1/14/2020

email: algroves@paalp.com Telephone: 575-200-5517

OCD Only

Received by: _____ Date: _____

Amber L Groves

From: Tommy J Bacon
Sent: Tuesday, January 14, 2020 4:17 PM
To: Amber L Groves
Subject: Craig St 3-13

Calculation are for the release at the Craig St 3-13 Meter skid.

100'(L) X 4'(W) X 1.25' (D) X 0.0154 = 7.7 BBLS

Tommy

APPENDIX B
NMOSE WATER LEVELS

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01368		C	ED		1	1	22	25S	26E	567261	3554059*	143	118	25
C 03655 POD1		CUB	ED			4	22	25S	26E	550692	3561324			
C 03655 POD2		CUB	ED			4	22	25S	26E	550732	3561337			
C 03655 POD3		CUB	ED	1	4	4	22	25S	26E	568458	3553019			
C 03655 POD4		CUB	ED			4	22	25S	26E	550684	3561362			

Average Depth to Water: **118 feet**
Minimum Depth: **118 feet**
Maximum Depth: **118 feet**

Record Count: 5

PLSS Search:

Section(s): 22 **Township:** 25S **Range:** 26E

***UTM location was derived from PLSS - see Help**

7/14/20 4:01 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX C
LABORATORY ANALYTICAL REPORTS

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 22, 2020

SYLWIA REYNOLDS

DEAN

12600 W. COUNTY ROAD 91

MIDLAND, TX 79707

RE: PLAINS

Enclosed are the results of analyses for samples received by the laboratory on 01/17/20 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 1 @ 1' R (H000181-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	<0.050	0.050	01/21/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	01/22/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *96.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 3 @ 3' (H000181-02)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.099**	0.050	01/21/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	**1.31**	0.050	01/21/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	**2.63**	0.050	01/21/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	**15.2**	0.150	01/21/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	**19.2**	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID	*253 %*	*73.3-129*

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**390**	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**2910**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**445**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane	*134 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*139 %*	*37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 2 @ 3' R (H000181-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	<0.050	0.050	01/21/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	01/22/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**428**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**147**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *93.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *98.7 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 3 @ 1' (H000181-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**11.9**	0.500	01/22/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	**54.8**	0.500	01/22/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	**17.3**	0.500	01/22/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	**109**	1.50	01/22/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	**193**	3.00	01/22/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *121 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/22/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1360**	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**4500**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**773**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *151 %* *41-142*

Surrogate: 1-Chlorooctadecane *189 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 3 @ 7' R (H000181-05)

TPH 8015M **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**74.0**	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**573**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**84.4**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane	*93.5 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*98.5 %*	*37.6-147*

Sample ID: AH - 3 @ 5' R (H000181-06)

TPH 8015M **mg/kg** **Analyzed By: MS** **S-04**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**743**	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**5430**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**798**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane	*175 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*219 %*	*37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 5 @ 1' R (H000181-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	<0.050	0.050	01/21/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	**0.189**	0.150	01/21/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID	*96.9 %*	*73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	01/22/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**178**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**30.0**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane	*91.1 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*102 %*	*37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	01/17/2020	Sampling Date:	01/15/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	PLAINS	Sampling Condition:	Cool & Intact
Project Number:	PP-2008	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS - EDDY CO NM		

Sample ID: AH - 4 @ 1' R (H000181-08)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**35.9**	1.00	01/21/2020	ND	1.82	90.9	2.00	13.6	
Toluene*	**123**	1.00	01/21/2020	ND	1.76	88.0	2.00	15.1	
Ethylbenzene*	**30.3**	1.00	01/21/2020	ND	1.81	90.6	2.00	14.8	
Total Xylenes*	**253**	3.00	01/21/2020	ND	5.23	87.2	6.00	14.9	
Total BTEX	**442**	6.00	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *131 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/22/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**2300**	10.0	01/21/2020	ND	212	106	200	3.47	
DRO >C10-C28*	**5450**	10.0	01/21/2020	ND	229	114	200	0.944	
EXT DRO >C28-C36	**680**	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *207 %* *41-142*

Surrogate: 1-Chlorooctadecane *188 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

sylwiareynolds@deandigs.com
pheobenunez@deandigs.com
algroves@paalp.com

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

PO #2020-004

		BILL TO	
Company Name:	Dean	P.O. #:	
Project Manager:	Sylwia Reynolds	Company:	Plains
Address:	12600 W Co Rd 91	Attn:	Amber Graves
City:	Midland	Address:	
State:	TX	City:	
Zip:	79707	State:	Zip:
Phone #:	(432) 999-8675	Phone #:	(575) 200-5517
Fax #:		Fax #:	
Project #:	PP-2008	Project Owner:	
Project Name:	Plains		
Project Location:	Eddy Co NM		
Sampler Name:	Reynolds		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride EPA 300.0	TPH 8015 Extended	BTEX 8021 B
H000181																	
1	AH-1@ 1ft R	G	1			X					X		11/5/20	9:50	X	X	X
2	AH-3@ 3ft					X					X			10:10			
3	AH-2@ 3ft R					X					X			10:50			
4	AH-3@ 1ft					X					X			11:10	X	X	X
5	AH-3@ 7ft R					X					X			11:30			
6	AH-3@ 5ft R					X					X			11:50			
7	AH-5@ 1ft R					X					X			12:20	X	X	X
8	AH-4@ 1ft R					X					X			12:40			

Relinquished By:	Reynolds	Date: 11/7/2020 Time: 9:30	Received By:	Tamara Oldaker
Relinquished By:		Date: Time:	Received By:	
Delivered By: (Circle One)	Sampler - UPS - Bus - Other: #113	0.3°	Sample Condition Cool: Yes / No; Intact: Yes / No	CHECKED BY: (Initials) TO

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: Analyse 1ft sample for each AH. Do Not analyse deeper sample if analyticals are less than 600 mg/kg and TPH (GRO+DRO) is less than 2,500 mg/kg

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 02, 2020

SYLWIA REYNOLDS

DEAN

12600 W. COUNTY ROAD 91

MIDLAND, TX 79707

RE: CRAIG ST 3 - 13H RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 02/25/20 11:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: BH - 1 @ 3' (H000587-01)

BTEX 8021B mg/kg Analyzed By: CK S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.314**	0.050	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	**1.92**	0.050	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	**2.47**	0.050	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	**16.5**	0.150	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	**21.2**	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *143 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**231**	10.0	02/28/2020	ND	216	108	200	2.60	
DRO >C10-C28*	**997**	10.0	02/28/2020	ND	241	121	200	10.8	
EXT DRO >C28-C36	**111**	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *104 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *122 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: BH - 2 @ 3' (H000587-02)

BTEX 8021B mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	<0.300	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	222	111	200	1.61	
DRO >C10-C28*	<10.0	10.0	02/28/2020	ND	248	124	200	6.02	
EXT DRO >C28-C36	<10.0	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *101 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *105 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: NORTH SW @ 2' (H000587-03)

BTEX 8021B mg/kg Analyzed By: CK S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	**0.213**	0.050	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	**0.270**	0.050	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	**2.32**	0.150	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	**2.81**	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *135 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**34.1**	10.0	02/28/2020	ND	222	111	200	1.61	
DRO >C10-C28*	**403**	10.0	02/28/2020	ND	248	124	200	6.02	
EXT DRO >C28-C36	**48.5**	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *110 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *113 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: EAST SW @ 2' (H000587-04)

BTEX 8021B mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	**0.095**	0.050	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	**0.088**	0.050	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	**0.730**	0.150	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	**0.914**	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/28/2020	ND	222	111	200	1.61	
DRO >C10-C28*	**202**	10.0	02/28/2020	ND	248	124	200	6.02	
EXT DRO >C28-C36	**37.8**	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *103 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *111 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: SOUTH SW @ 2' (H000587-05)

BTEX 8021B mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	**0.059**	0.050	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	**0.282**	0.050	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	**1.27**	0.150	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	**1.61**	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *124 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**61.9**	10.0	02/28/2020	ND	222	111	200	1.61	
DRO >C10-C28*	**447**	10.0	02/28/2020	ND	248	124	200	6.02	
EXT DRO >C28-C36	**53.7**	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *106 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *109 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN
SYLWIA REYNOLDS
12600 W. COUNTY ROAD 91
MIDLAND TX, 79707
Fax To:

Received:	02/25/2020	Sampling Date:	02/20/2020
Reported:	03/02/2020	Sampling Type:	Soil
Project Name:	CRAIG ST 3 - 13H RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS PL - EDDY CO NM		

Sample ID: WEST SW @ 2' (H000587-06)

BTEX 8021B mg/kg Analyzed By: CK S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**2.02**	0.200	02/27/2020	ND	1.97	98.6	2.00	4.38	
Toluene*	**10.9**	0.200	02/27/2020	ND	1.98	99.0	2.00	4.32	
Ethylbenzene*	**5.71**	0.200	02/27/2020	ND	1.98	98.9	2.00	3.92	
Total Xylenes*	**47.8**	0.600	02/27/2020	ND	5.81	96.8	6.00	3.91	
Total BTEX	**66.4**	1.20	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *165 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	02/27/2020	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: CK S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1630**	10.0	02/28/2020	ND	222	111	200	1.61	
DRO >C10-C28*	**5100**	10.0	02/28/2020	ND	248	124	200	6.02	
EXT DRO >C28-C36	**775**	10.0	02/28/2020	ND					

Surrogate: 1-Chlorooctane *292 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *247 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Dean	BILL TO	
Project Manager:	Sylwia Reynolds	P.O. #:	
Address:	12600 WCR 91	Company:	Plains
City:	Midland State: Zip:	Attn:	Amber Groves
Phone #:	432-999-8675 Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Craig St 3-13H Release	State:	Zip:
Project Location:	Eddy county, NM	Phone #:	575-200-5517
Sampler Name:	Rick Pena	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH 8015 M EXT	CHLORIDES	BTEX 8021 B									
H000587																										
1	BH-1 @ 3ft	G	1			x					x		2/20/20	12:00	x	X	X									
2	BH-2 @ 3ft	G	1			x					x		2/20/20	13:00	x	X	X									
3	North SW @ 2ft	G	1			x					x		2/20/20	12:30	x	X	X									
4	East SW @ 2ft	G	1			x					x		2/20/20	12:45	x	X	X									
5	South SW @ 2ft	G	1			x					x		2/20/20	12:15	x	X	X									
6	West SW @ 2ft	G	1			x					x		2/20/20	13:15	x	X	X									
		G	1			x					x		"		x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											

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 consequental 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: 2/25/20 Time: 9:52	Received By:	
Relinquished By:	Date: 2-25-20 Time: 1250	Received By:	

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address: jeff.lindley@deancdigs.com algroves@paalp.com, sreynolds@deancdigs.com

REMARKS: Bill Plains

Delivered By: (Circle One)	Observed Temp. °C 0.4	Sample Condition Cool Intact	CHECKED BY: (Initials)	Turnaround Time: Standard ☒ Rush ☐	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C
Sampler - UPS - Bus - Other:	Corrected Temp. °C	☑ Yes ☑ Yes ☐ No ☐ No	TO	Thermometer ID #97 Correction Factor + 0.4 °C	☐ Yes ☐ Yes ☐ No ☐ No Corrected Temp. °C

FORM-006 R 3.0

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 11, 2020

SYLWIA REYNOLDS

DEAN

12600 W. COUNTY ROAD 91

MIDLAND, TX 79707

RE: CRAIG ST 3 - 13H RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 02/25/20 12:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC - 1	H000588-01	Soil	20-Feb-20 13:20	25-Feb-20 12:50

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

WC - 1

H000588-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**192**		16.0	mg/kg	4	0022621	AC	27-Feb-20	4500-Cl-B	
Ignitability	>140		50.0	°F	1	0022118	AC	02-Mar-20	ASTM D 93-80	
Paint Filter Test	FAIL			N/A	1	0030303	AC	03-Mar-20	9095	A-01
pH*	**7.42**		0.100	pH Units	1	0022608	GM	26-Feb-20	9045	
Reactive Cyanide	<0.100		0.100	mg/kg	1	0030912	AC	09-Mar-20	9010	
Reactive Sulfide	**0.0800**		0.0100	mg/kg	1	0030912	AC	09-Mar-20	9030	
TCLP Volatile Organic Compounds by GCMS										
Benzene*	<0.0250		0.0250	mg/L	50	0022517	CK	29-Feb-20	1311/8260B	
Surrogate: Dibromofluoromethane			*107 %*	*88.8-113*		*0022517*	CK	*29-Feb-20*	*1311/8260B*	
Surrogate: Toluene-d8			*102 %*	*83.1-119*		*0022517*	CK	*29-Feb-20*	*1311/8260B*	
Surrogate: 4-Bromofluorobenzene			*97.1 %*	*84.2-107*		*0022517*	CK	*29-Feb-20*	*1311/8260B*	
Petroleum Hydrocarbons by GC FID										**S-04**
GRO C6-C10*	**367**		10.0	mg/kg	1	0022714	CK	28-Feb-20	8015B	
DRO >C10-C28*	**2800**		10.0	mg/kg	1	0022714	CK	28-Feb-20	8015B	
EXT DRO >C28-C36	**580**		10.0	mg/kg	1	0022714	CK	28-Feb-20	8015B	
Surrogate: 1-Chlorooctane			*146 %*	*44.3-144*		*0022714*	CK	*28-Feb-20*	*8015B*	
Surrogate: 1-Chlorooctadecane			*182 %*	*42.2-156*		*0022714*	CK	*28-Feb-20*	*8015B*	
Green Analytical Laboratories										
TCLP Metals by ICP (1311)										
Arsenic	<0.500		0.500	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
Barium	<0.250		0.250	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
Cadmium	<0.250		0.250	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

WC - 1

H000588-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
TCLP Metals by ICP (1311)										
Chromium	<0.250		0.250	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
Lead	<0.500		0.500	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
Selenium	<0.500		0.500	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
Silver	<0.250		0.250	mg/L	5	B200318	AES	09-Mar-20	EPA200.7/13 11	
TCLP Mercury by CVAA										
Mercury	<0.0002		0.0002	mg/L	1	B200309	LLG	05-Mar-20	EPA245.1	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022118 - General Prep - Wet Chem										
LCS (0022118-BS1)				Prepared: 26-Feb-20 Analyzed: 27-Feb-20						
Ignitability	80.0		°F	80.0		100	97.5-105			
Duplicate (0022118-DUP1)		**Source: H000554-01**		Prepared & Analyzed: 27-Feb-20						
Ignitability	44.0	50.0	°F		43.0			2.30	20	
Batch 0022608 - General Prep - Wet Chem										
LCS (0022608-BS1)				Prepared & Analyzed: 26-Feb-20						
pH	7.06		pH Units	7.00		101	90-110			
Duplicate (0022608-DUP1)		**Source: H000554-01**		Prepared & Analyzed: 26-Feb-20						
pH	6.87	0.100	pH Units		6.84			0.438	20	
Batch 0022621 - 1:4 DI Water										
Blank (0022621-BLK1)				Prepared & Analyzed: 26-Feb-20						
Chloride	ND	16.0	mg/kg							
LCS (0022621-BS1)				Prepared & Analyzed: 26-Feb-20						
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (0022621-BSD1)				Prepared & Analyzed: 26-Feb-20						
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	
Batch 0030912 - General Prep - Wet Chem										
Blank (0030912-BLK1)				Prepared & Analyzed: 09-Mar-20						
Reactive Sulfide	ND	0.0100	mg/kg							
Reactive Cyanide	ND	0.100	mg/kg							

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0030912 - General Prep - Wet Chem										
Duplicate (0030912-DUP1)	**Source: H000563-01**			Prepared & Analyzed: 09-Mar-20						
Reactive Cyanide	ND	0.100	mg/kg		ND				20	
Reactive Sulfide	4.94	0.0100	mg/kg		5.63			13.1	20	

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Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

TCLP Volatile Organic Compounds by GCMS - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022517 - Volatiles										
Blank (0022517-BLK1)				Prepared: 25-Feb-20 Analyzed: 28-Feb-20						
Benzene	ND	0.000500	mg/L							
Surrogate: Dibromofluoromethane	*0.0256*		mg/L	*0.0250*		*103*	*88.8-113*			
Surrogate: Toluene-d8	*0.0259*		mg/L	*0.0250*		*104*	*83.1-119*			
Surrogate: 4-Bromofluorobenzene	*0.0243*		mg/L	*0.0250*		*97.3*	*84.2-107*			
LCS (0022517-BS1)				Prepared: 25-Feb-20 Analyzed: 28-Feb-20						
Benzene	0.0186	0.000500	mg/L	0.0200		92.8	86.6-116			
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.0250*		*102*	*88.8-113*			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.0250*		*99.5*	*83.1-119*			
Surrogate: 4-Bromofluorobenzene	*0.0257*		mg/L	*0.0250*		*103*	*84.2-107*			
LCS Dup (0022517-BSD1)				Prepared: 25-Feb-20 Analyzed: 28-Feb-20						
Benzene	0.0179	0.000500	mg/L	0.0200		89.4	86.6-116	3.68	4.16	
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.0250*		*101*	*88.8-113*			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.0250*		*99.7*	*83.1-119*			
Surrogate: 4-Bromofluorobenzene	*0.0255*		mg/L	*0.0250*		*102*	*84.2-107*			

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Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

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
Batch 0022714 - General Prep - Organics										
Blank (0022714-BLK1)				Prepared: 27-Feb-20 Analyzed: 28-Feb-20						
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	*52.6*		mg/kg	*50.0*		*105*	*44.3-144*			
Surrogate: 1-Chlorooctadecane	*53.7*		mg/kg	*50.0*		*107*	*42.2-156*			
LCS (0022714-BS1)				Prepared: 27-Feb-20 Analyzed: 28-Feb-20						
GRO C6-C10	222	10.0	mg/kg	200		111	78.8-127			
DRO >C10-C28	248	10.0	mg/kg	200		124	80-132			
Total TPH C6-C28	470	10.0	mg/kg	400		117	81.3-128			
Surrogate: 1-Chlorooctane	*59.8*		mg/kg	*50.0*		*120*	*44.3-144*			
Surrogate: 1-Chlorooctadecane	*57.4*		mg/kg	*50.0*		*115*	*42.2-156*			
LCS Dup (0022714-BSD1)				Prepared: 27-Feb-20 Analyzed: 28-Feb-20						
GRO C6-C10	225	10.0	mg/kg	200		113	78.8-127	1.61	15.1	
DRO >C10-C28	234	10.0	mg/kg	200		117	80-132	6.02	17.1	
Total TPH C6-C28	459	10.0	mg/kg	400		115	81.3-128	2.35	15	
Surrogate: 1-Chlorooctane	*59.1*		mg/kg	*50.0*		*118*	*44.3-144*			
Surrogate: 1-Chlorooctadecane	*58.0*		mg/kg	*50.0*		*116*	*42.2-156*			

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Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

TCLP Metals by ICP (1311) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200318 - EPA 1311										
Blank (B200318-BLK1)				Prepared: 05-Mar-20 Analyzed: 09-Mar-20						
Cadmium	ND	0.250	mg/L							
Silver	ND	0.250	mg/L							
Selenium	ND	0.500	mg/L							
Lead	ND	0.500	mg/L							
Arsenic	ND	0.500	mg/L							
Chromium	ND	0.250	mg/L							
Barium	ND	0.250	mg/L							
LCS (B200318-BS1)				Prepared: 05-Mar-20 Analyzed: 09-Mar-20						
Silver	0.489	0.250	mg/L	0.500		97.7	85-115			
Selenium	37.0	0.500	mg/L	40.0		92.5	85-115			
Lead	8.98	0.500	mg/L	10.0		89.8	85-115			
Chromium	9.26	0.250	mg/L	10.0		92.6	85-115			
Cadmium	8.87	0.250	mg/L	10.0		88.7	85-115			
Barium	9.27	0.250	mg/L	10.0		92.7	85-115			
Arsenic	19.2	0.500	mg/L	20.0		96.1	85-115			
LCS Dup (B200318-BSD1)				Prepared: 05-Mar-20 Analyzed: 09-Mar-20						
Chromium	9.02	0.250	mg/L	10.0		90.2	85-115	2.58	20	
Barium	9.05	0.250	mg/L	10.0		90.5	85-115	2.44	20	
Lead	8.95	0.500	mg/L	10.0		89.5	85-115	0.243	20	
Arsenic	18.9	0.500	mg/L	20.0		94.4	85-115	1.82	20	
Selenium	36.2	0.500	mg/L	40.0		90.5	85-115	2.21	20	
Silver	0.487	0.250	mg/L	0.500		97.4	85-115	0.313	20	
Cadmium	8.70	0.250	mg/L	10.0		87.0	85-115	1.97	20	

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CARDINAL Laboratories

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Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: NONE GIVEN Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 11-Mar-20 11:50

TCLP Mercury by CVAA - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200309 - EPA 245.1/7470										
Blank (B200309-BLK1)				Prepared: 04-Mar-20 Analyzed: 05-Mar-20						
Mercury	ND	0.0002	mg/L							
LCS (B200309-BS1)				Prepared: 04-Mar-20 Analyzed: 05-Mar-20						
Mercury	0.0049	0.0002	mg/L	0.00500		97.9	85-115			
LCS Dup (B200309-BSD1)				Prepared: 04-Mar-20 Analyzed: 05-Mar-20						
Mercury	0.0050	0.0002	mg/L	0.00500		101	85-115	2.86	20	

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Notes and Definitions

Z-01a	FAIL
Z-01	>140
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
A-01	Sample is dry soil with no visible liquid.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

		BILL TO	
Company Name:	Dean	P.O. #:	
Project Manager:	Sylwia Reynolds	Company:	Plains
Address:	12600 WCR 91	Attn:	Amber Groves
City:	Midland State: Zip:	Address:	
Phone #:	432-999-8675 Fax #:	City:	
Project #:	Project Owner:	State:	Zip:
Project Name:	Craig St 3-13H Release	Phone #:	575-200-5517
Project Location:	Eddy County, NM	Fax #:	
Sampler Name:	Rick Pena		

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER :	SAMPLING: DATE	SAMPLING: TIME	TPH 8015 M EXT	CHLORIDES	BTEX 8021 B	RCI	NORM	TCLP metals	TCLP Benzene	Paint filter				
H000588 1	WC-1	G	4			x					x		2/20/20	13:20	x	X		X	X	X	X	X				
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											
		G	1			x					x				x											

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 consequental 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: Reynolds	Date: 2/25/20 Time: 10:09	Received By: [signature]	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address: jeffhindley@deandigs.com algraves@paalp.com, sreynolds@deandigs.com
Relinquished By: [signature]	Date: 2-25-20 Time: 1250	Received By: Tamara Oldaker	REMARKS: Bill plains
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 0.4 Corrected Temp. °C	Sample Condition Cool Intact ☑ Yes ☑ Yes ☐ No ☐ No — CHECKED BY: (Initials) T.O.	Turnaround Time: Standard ☒ Rush ☐ Thermometer ID #97 Correction Factor + 0.4 °C — Bacteria (only) Sample Condition Cool Intact ☐ Yes ☐ Yes ☐ No ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.0

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701

PBELAB

Analytical Report

Prepared for:

Sylwia Reynolds

Dean

12600 W County Rd 91

Midland, TX 79707

Project: Plains Craig St 3-13H Release

Project Number: PP-2008

Location: Eddy County, NM

Lab Order Number: 0L16007

NELAP ACCREDITED TNI LABORATORY

NELAP/TCEQ # T104704516-17-8

Report Date: 12/21/20

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-6 @ 1'	0L16007-01	Soil	12/14/20 08:50	12-16-2020 15:46
AH-6 @ 2'	0L16007-02	Soil	12/14/20 09:05	12-16-2020 15:46
AH-7 @ 1'	0L16007-03	Soil	12/14/20 09:15	12-16-2020 15:46
AH-7 @ 2'	0L16007-04	Soil	12/14/20 09:20	12-16-2020 15:46
AH-8 @ 1'	0L16007-05	Soil	12/14/20 09:40	12-16-2020 15:46
AH-8 @ 2'	0L16007-06	Soil	12/14/20 09:45	12-16-2020 15:46

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-6 @ 1'

0L16007-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**7.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*98.1 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*114 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-6 @ 2'

0L16007-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**16.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*106 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*121 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-7 @ 1'

0L16007-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**15.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.4	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*108 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*123 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-7 @ 2'

0L16007-04 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**17.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.1	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	30.1	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*105 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*120 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.1	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-8 @ 1'

0L16007-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**16.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*103 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*117 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

AH-8 @ 2'

0L16007-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	**20.0**	0.1	%	1	P0L1703	12/17/20	12/17/20	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	31.2	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C12-C28	ND	31.2	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
>C28-C35	ND	31.2	mg/kg dry	1	P0L1803	12/18/20	12/18/20	TPH 8015M	
Surrogate: 1-Chlorooctane		*99.6 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Surrogate: o-Terphenyl		*113 %*	*70-130*		*P0L1803*	*12/18/20*	*12/18/20*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	31.2	mg/kg dry	1	[CALC]	12/18/20	12/18/20	calc	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P0L1703 - * DEFAULT PREP *** **										
Blank (P0L1703-BLK1)				Prepared & Analyzed: 12/17/20						
% Moisture	ND	0.1	%							
Blank (P0L1703-BLK2)				Prepared & Analyzed: 12/17/20						
% Moisture	ND	0.1	%							
Blank (P0L1703-BLK3)				Prepared & Analyzed: 12/17/20						
% Moisture	ND	0.1	%							
Blank (P0L1703-BLK4)				Prepared & Analyzed: 12/17/20						
% Moisture	ND	0.1	%							
Duplicate (P0L1703-DUP1)		**Source: 0L15005-01**		Prepared & Analyzed: 12/17/20						
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P0L1703-DUP2)		**Source: 0L15007-04**		Prepared & Analyzed: 12/17/20						
% Moisture	11.0	0.1	%		10.0			9.52	20	
Duplicate (P0L1703-DUP3)		**Source: 0L15007-19**		Prepared & Analyzed: 12/17/20						
% Moisture	10.0	0.1	%		11.0			9.52	20	
Duplicate (P0L1703-DUP4)		**Source: 0L15010-02**		Prepared & Analyzed: 12/17/20						
% Moisture	5.0	0.1	%		4.0			22.2	20	R3
Duplicate (P0L1703-DUP5)		**Source: 0L16003-04**		Prepared & Analyzed: 12/17/20						
% Moisture	4.0	0.1	%		4.0			0.00	20	
Duplicate (P0L1703-DUP6)		**Source: 0L16003-14**		Prepared & Analyzed: 12/17/20						
% Moisture	7.0	0.1	%		7.0			0.00	20	

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P0L1703 - * DEFAULT PREP *** **										
Duplicate (P0L1703-DUP7)		**Source: 0L16004-04**		Prepared & Analyzed: 12/17/20						
% Moisture	1.0	0.1	%		1.0			0.00	20	
Duplicate (P0L1703-DUP8)		**Source: 0L16009-02**		Prepared & Analyzed: 12/17/20						
% Moisture	1.0	0.1	%		2.0			66.7	20	R3

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P0L1803 - TX 1005										
Blank (P0L1803-BLK1)				Prepared & Analyzed: 12/18/20						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*103*		*"*	*100*		*103*	*70-130*			
Surrogate: o-Terphenyl	*54.6*		*"*	*50.0*		*109*	*70-130*			
LCS (P0L1803-BS1)				Prepared & Analyzed: 12/18/20						
C6-C12	888	25.0	mg/kg wet	1000		88.8	75-125			
>C12-C28	954	25.0	"	1000		95.4	75-125			
Surrogate: 1-Chlorooctane	*123*		*"*	*100*		*123*	*70-130*			
Surrogate: o-Terphenyl	*56.5*		*"*	*50.0*		*113*	*70-130*			
LCS Dup (P0L1803-BSD1)				Prepared & Analyzed: 12/18/20						
C6-C12	894	25.0	mg/kg wet	1000		89.4	75-125	0.665	20	
>C12-C28	940	25.0	"	1000		94.0	75-125	1.50	20	
Surrogate: 1-Chlorooctane	*126*		*"*	*100*		*126*	*70-130*			
Surrogate: o-Terphenyl	*60.8*		*"*	*50.0*		*122*	*70-130*			
Calibration Check (P0L1803-CCV1)				Prepared & Analyzed: 12/18/20						
C6-C12	444	25.0	mg/kg wet	500		88.8	85-115			
>C12-C28	469	25.0	"	500		93.8	85-115			
Surrogate: 1-Chlorooctane	*103*		*"*	*100*		*103*	*70-130*			
Surrogate: o-Terphenyl	*51.5*		*"*	*50.0*		*103*	*70-130*			
Calibration Check (P0L1803-CCV2)				Prepared & Analyzed: 12/18/20						
C6-C12	425	25.0	mg/kg wet	500		85.1	85-115			
>C12-C28	439	25.0	"	500		87.8	85-115			
Surrogate: 1-Chlorooctane	*100*		*"*	*100*		*100*	*70-130*			
Surrogate: o-Terphenyl	*49.1*		*"*	*50.0*		*98.2*	*70-130*			

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P0L1803 - TX 1005										
Matrix Spike (P0L1803-MS1)	**Source: 0L16009-01**			Prepared & Analyzed: 12/18/20						
C6-C12	819	25.5	mg/kg dry	1020	13.2	78.9	75-125			
>C12-C28	1170	25.5	"	1020	467	69.3	75-125			QM-05
Surrogate: 1-Chlorooctane	*121*		*"*	*102*		*118*	*70-130*			
Surrogate: o-Terphenyl	*53.8*		*"*	*51.0*		*105*	*70-130*			
Matrix Spike Dup (P0L1803-MSD1)	**Source: 0L16009-01**			Prepared: 12/18/20 Analyzed: 12/19/20						
C6-C12	825	25.5	mg/kg dry	1020	13.2	79.5	75-125	0.732	20	
>C12-C28	1150	25.5	"	1020	467	67.3	75-125	2.91	20	QM-05
Surrogate: 1-Chlorooctane	*120*		*"*	*102*		*117*	*70-130*			
Surrogate: o-Terphenyl	*63.0*		*"*	*51.0*		*123*	*70-130*			

Dean	Project: Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number: PP-2008	
Midland TX, 79707	Project Manager: Sylwia Reynolds	

Notes and Definitions

ROI	Received on Ice
R3	The RPD exceeded the acceptance limit due to sample matrix effects.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
BULK	Samples received in Bulk soil containers
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
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 12/21/2020

Brent Barron, Laboratory Director/Technical Director

Dean	Project:	Plains Craig St 3-13H Release	Fax:
12600 W County Rd 91	Project Number:	PP-2008	
Midland TX, 79707	Project Manager:	Sylwia Reynolds	

PBELAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
1400 Rankin Hwy
Midland, Texas 79701

Phone: 432-686-7235

Project Manager: Sylwia Reynolds

Company Name: Dean

Company Address: 12600 WCR 91

City/State/Zip: Midland TX 79707

Telephone No: 432-230-0920 Fax No:

Sampler Signature: Kaylan Longee

e-mail: aigreves@paalp.com
sylwiareynolds@deandigs.com
jeffkindley@deandigs.com
kaylanlongee@deanequip.com

Project Name: Craig St 3-13H Rlease

Project #: PP-2008

Project Loc: Eddy County, New Mexico

WORK ORDER #: SRS #: 2020-004

Report Format: X Standard ☐ TRRP ☐ NPDES
elizabethstuart@deandigs.com

(lab use only)
ORDER #: OL16007

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3 250 ml Poly	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None 1L Poly	NaOH/ZnAc	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TPH TX1005 EXT (TEXAS)	BTEX 8021 B	TCLP BENZENE	CHLORIDES	TCLP METALS	NORM	PAINT FILTER	TOX	RCI	pH	TPH 8015 M (NEW MEXICO)				7 Day TAT	24 hour TAT
1	AH-6 @ 1'	1 FT	1 FT	12/14/20	8:50AM		1	X																				X				X	
2	AH-6 @ 2'	2 FT	2 FT	12/14/20	9:05AM		1	X																				X				X	
3	AH-7 @ 1'	1 FT	1 FT	12/14/20	9:15AM		1	X																				X				X	
4	AH-7 @ 2'	2 FT	2 FT	12/14/20	9:20AM		1	X																				X				X	
5	AH-8 @ 1'	1 FT	1 FT	12/14/20	9:40AM		1	X																				X				X	
6	AH-8 @ 2'	2 FT	2 FT	12/14/20	9:45AM		1	X																				X				X	

Special Instructions:

	Date	Time		Date	Time
Relinquished by: Robert Belles	12/16	15:46			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: Tyrina Bledsoe	12/16/20	15:46

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt:
Received: 4.7 °C OF4
Adjusted: 5.7 °C Factor 12

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 19, 2020

SYLWIA REYNOLDS

DEAN

12600 W. COUNTY ROAD 91

MIDLAND, TX 79707

RE: CRAIG ST 3 - 13H RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 03/10/20 10:51.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: PLAINS - PP 9115 Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 19-Mar-20 10:20

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC - 1	H000746-01	Soil	06-Mar-20 10:30	10-Mar-20 10:51

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: PLAINS - PP 9115 Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 19-Mar-20 10:20

WC - 1

H000746-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Radionuclides										**SUB-RS**
Radium-226	**0.36 ± 0.04**			pCi/gram	1	0011619	CK	18-Mar-20	GammaRay HPGE	
Radium-228	**0.19 ± 0.02**			pCi/gram	1	0011619	CK	18-Mar-20	GammaRay HPGE	
Total Radium	**0.55 ± 0.04**			pCi/gram	1	0011619	CK	18-Mar-20	GammaRay HPGE	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

DEAN 12600 W. COUNTY ROAD 91 MIDLAND TX, 79707	Project: CRAIG ST 3 - 13H RELEASE Project Number: PLAINS - PP 9115 Project Manager: SYLWIA REYNOLDS Fax To:	Reported: 19-Mar-20 10:20

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

Z-01b	0.55 ± 0.04
Z-01a	0.36 ± 0.04
Z-01	0.19 ± 0.02
SUB-RS	Analysis subcontracted to Radiation Safety Engineering, Inc.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Dean	BILL TO	
Project Manager:	Sylwia Reynolds	P.O. #:	
Address:	12600 WCR 91	Company:	Plains
City:	Midland St Tx Zip:	Attn:	Amber Groves
Phone #:	432-999-8675 Fax #:	Address:	
Project #:	PP-9115 Project Owner:	City:	
Project Name:	Plains Craig St 3-13# Release	State: Zip:	
Project Location:		Phone #:	575-200-5517
Sampler Name:	Kaylan Longee	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH 8015 M EXT	CHLORIDES	BTEX 8021 B	RCI	TCLIP BENZENE	TCLIP METALS	NORM	PAINT FILTER				
H000746 1	WC-1	G	4			x					x		03/6/20	10:30							X					

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 consequental 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: 3/10/20 Time: 10:51	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address: REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 2.7 Corrected Temp. °C	Sample Condition Cool Yes No Intact Yes No	CHECKED BY: (Initials) TO

Turnaround Time: Standard ☑ Rush ☐
Thermometer ID #97
Correction Factor + 0.4 °C

Bacteria (only) Sample Condition
Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.0

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

Photograph No 1.	
Date: February 18, 2020	Direction: West
Description: View of excavation along southern part of release by LACT unit.	

Photograph No 2.	
Date: February 19, 2020	Direction: North
Description: View of excavation along east side of LACT unit.	

Photograph No 3.	
Date: February 20, 2020	Direction: West
Description: View of excavation along northern part of release by LACT unit.	

Photograph No 4.	
Date: February 20, 2020	Direction: South
Description: View of excavation along west side of LACT unit.	

Photograph No 5.	
Date: June 1, 2020	Direction: South
Description: View of backfilled excavation on east side of LACT unit.	

Photograph No 6.	
Date: June 1, 2020	Direction: Northeast
Description: View of excavation along south side of LACT unit.	

APPENDIX E

MONITOR WELL LOG AND GROUNDWATER ANALYTICAL RESULTS

Memorandum No. 2 Concerning Magnesium Brine Wells of the Emro Corporation Near Carlsbad, New Mexico

By C. V. Theis and W. E. Hale
In cooperation with the Defense Plant Corporation
March 15, 1942

As it now appears that the U.S. Geological Survey will be only casually connected with any further exploration of the magnesium brines in Red Bluff Draw, south of Carlsbad, New Mexico, it seems proper to record certain tentative hypotheses and tentative estimates of the reserve available arrived at as the result of the work already done. The hypotheses are based upon insufficient data and can only be said to be reasonable geologically and to fit the available data better than any others that have occurred to the writer. If the question of further exploration arises they may furnish a means of estimating the chances of success in finding a usable reserve of brine, and if further work is done they will furnish a rational background to guide the exploration.

Nature of the Aquifer

The materials penetrated by the drill in this area consist primarily of massive, selenitic, alabastine, and saccaroidal gypsum, with which is admixed some minor amount of clay and siltstone and some dolomite. Below the horizon of the brine some anhydrite is encountered. The brine has been encountered at depths between 100 and 200 feet and is always under pressure, sufficient to result in flowing wells at the lower elevations. No definite confining bed is present and there is no abrupt and definite change in material at any horizon. Gypsiferous water is found at shallow depths, between 14 and 52 feet in most of the holes and at a depth of 80 feet in Etz No. 1, also in gypsum apparently indistinguishable from the remainder of the gypsum. The material appears, therefore, to be heterogeneous in detail but rather uniform en masse and yet possesses sufficient bedding to give rise to porous zones and impervious confining beds over sufficient area to yield considerable pressure on the brine.

Two hypotheses have been proposed to explain the nature of the material in which the brine occurs. The first considers the gypsum a fill in an older valley excavated to a considerable depth below the present surface. The second, apparently originally proposed by Lang, considers the gypsum a weathering product of the anhydrite originally making up the Castile formation. The difficulties facing the acceptance of the fill hypothesis seem insurmountable. The valley must be filled with a gypsum debris to the almost entire exclusion of other material more resistant to abrasion and solution. The debris must be arranged in beds or perhaps shoe-string lenses that have continuous permeability over considerable distances and must be overlain by material, indistinguishable in drill cuttings from the porous material, that is impermeable over an area sufficient to give rise to considerable head in the underlying brine. These porous beds must be at various elevations but must also be to some degree interconnected. On the other hand, weathering commonly works down some beds at a faster rate than in adjacent more resistant beds. Given the thorough weathering of a thick mass of bedded anhydrite to gypsum it would be expected that certain beds would be opened up in a porous manner whereas others would be left impervious either because of less weathering or because of more weathering reducing the original beds to a mass of gypsum blocks embedded in a clayey residuum. Further the fact that the brine occurrences can be interpreted as

being in one or two beds, as will be shown later, is contributory evidence that we are dealing here with a weathered residuum.

The origin of the brine appears obscure. The process which gave rise to it must be one capable of giving a saturated solution of magnesium, sodium, and sulphate with a high boron content, with the almost complete exclusion of calcium, although it occurs in high-calcium rocks, and of chloride, the radical commonly accompanying sodium and magnesium in the Permian basin. The origin forms a very interesting problem for a physical chemist. The brine is apparently not connate because in the first place it seems difficult to produce a mother liquor of its composition by the processes of evaporation, although considering the complex chemistry of saline deposits it might not be impossible. Probably more conclusive evidence is found in the apparent fact that the brine occurs in weathered zones. The brine itself, being saturated, must insulate the rocks that it covers from weathering, and apparently the only way the rocks could be weathered would be by first diluting the brine. Lang has proposed that the constituents have been concentrated from minute quantities of the elements brought in from long distances and that the solutions because of their density have settled in the traps. This hypothesis may hold the nucleus of the truth but needs some amplification. The ground-water circulation must have been quite abnormal and the solutions must have been concentrated before they arrived at the traps. This would point to an extremely slow ground-water circulation.

The simplest hypothesis from the geological standpoint would be to consider the brines as a product of the weathering that converted the anhydrite to gypsum. The problem lies in the realm of physical chemistry. There are sources of magnesium present in the deposits themselves in the form of thin dolomite beds. Sources of sodium and boron are problematical but it would seem possible that they might be present in traces. Zeoloitic minerals in the clay may possibly be a source of the sodium. It would seem probable that as weathering proceeded in these beds, concentrated solutions would be formed of the most soluble materials available because there would be a tendency for any increment of fresh water to be bound as water of crystallization as the anhydrite was changed to gypsum. There would be a multiple phase system of anhydrite, gypsum, and a concentrated solution of highly soluble salts. If such an hypothesis is acceptable to the physical chemist, it would probably to most acceptable to the geologist.

It may be noted that this hypothesis implies that the accumulations of brine are geologically temporary and that its quantity is limited. As the brine becomes saturated, weathering of the bed enclosing it is arrested. Fresher water added at the surface by rainfall infiltration weathers down the more resistant beds between the brine traps. As these are lowered the brine overflows its dams and joins the ground-water circulation.

Perhaps the simplest explanation of the brine from a geological standpoint would be to assume that there is or has been ground-water circulation along the strike of the beds. If the beds are assumed to have in themselves small amounts of sodium, magnesium, and boron, water seeping into the beds at a higher elevation and discharging at a lower would in one continuous process probably prepare the solution cavities and fill them with the concentrate. In the initial stages of solution the water would move from the higher level to the lower converting the anhydrite to gypsum and opening solution passages probably by a combination of physical disruption of the bed in the process of hydration and solution of gypsum. This process would begin at the surface and gradually work down the dip of the bed. Near the base of the weathered zone at any time the solutions would probably always be more

concentrated because they would travel more slowly thru the incipient openings they were in process of enlarging and perhaps also because some of the water would be bound in the gypsum molecule. In the initial stages this more highly mineralized water would be swept onward with the general circulation. As the action progressed, however, down the dip, the flow lines become more and more circuitous and longer giving additional opportunity for solution and concentration. A point would be reached where the density of the brine and the height it must be lifted from the base of the weathered zone to the outlet would be sufficient to balance the longer column of fresh water behind it. The heavier solution would remain in the aquifer and fresher water moving near the surface would override it. As the heavy brine accumulated it would fill part of the openings, thus restricting and slowing the flow of the fresher water and giving it more opportunity to pick up soluble salts. The brine trapped in the bed would probably approach or attain saturation. Eventually an equilibrium would be attained in which the top level of the brine extended nearly horizontally from the point of outflow.

Fortunately, all the questions about the origin of the brine do not have to be resolved before reaching some conclusions as to the probable amount of brine in the vicinity, although because the nature and occurrence are so intangible any evidence that makes more definite our concepts related to it helps also to make our estimates more valid.

Probable Structure of the Rocks in Which the Brine Occurs

The accompanying table gives the elevations of the piezometric surface at each of the wells and the elevations at which the brine was encountered. Wells Nos. 1 and 2 were pumped and the water levels in Nos. 5 and 7 were lowered, the latter conclusively as a result of pumping No. 2 and the former almost certainly so. It will be observed that the static water levels in Nos. 2 and 7 had almost exactly the same elevation before pumping, the small differences being probably the result of slightly different densities of the brine operative over columns about 100 feet long. The level of No. 5 could not be measured before pumping began but it is probable that its static level was also at about the same elevation within the differences resulting from different densities.

If we assume that these three occurrences of the brine known to be connected lie in the same bed and at the same horizon, the dip as shown in figure 1 (not found in archives) is about 90 feet to the mile north 30° east. This is about the same dip as noted by Lang in the beds of the reef in the Barrera del Guadalupe. Although the three wells lie too nearly on a straight line to sharply define the structure yet the brine occurrences at Nos. 3 and 6 lie also within a few feet of the plane containing the occurrences at Nos. 2, 5, and 7. Neither well 3 nor well 6 was affected by the pumping; the peizometric surface of No. 3 was a little higher than that of the three wells known to be connected, and that of No. 6 was about 10 feet higher. Hence there is definite evidence that Nos. 3 and 6 are not connected with Nos. 2, 5, and 7, at least in a direct manner. However, if the brines do occur in solution passages in a weathered bed it would seem altogether possible that there might be fairly independent systems of passages in beds at or near the same geologic horizon. It would seem therefore that the location of these brine occurrences apparently in or near the same plane that contains the others supports the conception that we are dealing with one bed or a thin series of beds, notwithstanding the fact that the occurrences have no direct connection.

A lower horizon of brine, 48 feet below the upper, was struck in well No. 5. The brine occurs in wells 4 and 1 at elevations respectively 60 and 35 feet below the supposed plane of the brine in the other wells. There is a suggestion that these also may be related to one bed but if so an explanation must be found for the fact that the static level of No. 1 is over 100 feet below that of No. 4.

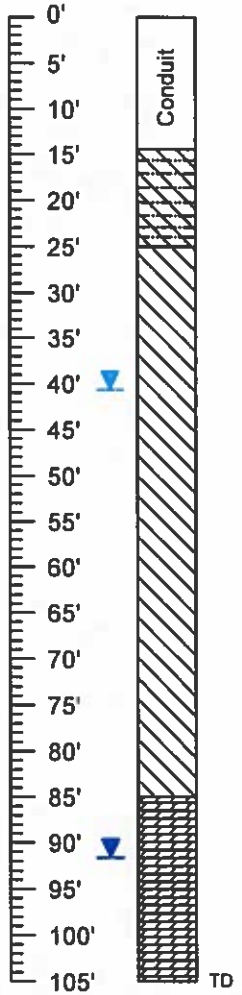
Significance of Pumping Tests

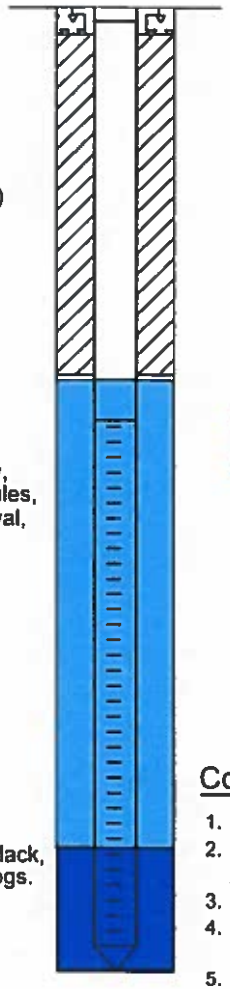
The pumping test on well No. 1 did not yield data that are of particular significance in determining the nature of the aquifer. By its low yield and high drawdown it indicated that the aquifer near it is of comparatively low transmissibility. Its very low piezometric surface and the fact that no other wells reacted to its pumping indicates that the body of brine that furnishes it is probably of quite local extent.

The data on well 2 are more complete. It was pumped at practically a constant rate and an automatic record is available for the fluctuations of water level in well 7 during the time that well 2 was pumping. The rate of fall in well 7 indicates a transmissibility of around 15,000 and a coefficient of storage of the order of 0.0001. The zone in which the brine is found is thought to average about 3 feet thick, which thickness would make the coefficient of permeability about 5,000. The coefficient of storage represents the amount of water in cubic feet withdrawn from each column of the aquifer with base 1 foot square when the head is reduced 1 foot. This low coefficient of storage indicates that the aquifer is under artesian conditions and that there is for instance no significant seepage of liquid through the confining bed.

It was found that the drawdown curve of well 7 could be made to fit the type curves for withdrawal either from a point source, as for instance a well, or from a line, as for instance a trench. There was no difference in the order of the coefficients determined by the two methods. So far as this curve indicates the wells might be drawing from an areally extensive aquifer or from a trench-like aquifer. During the first 24 hours of recovery the rate of recovery in well 2 followed the rule for recovery of a well drawing from an aquifer extensive in all directions and for the next 10 days it appeared to follow that for recovery from a trench-like aquifer. This phenomenon could be explained as the effects produced in a linear aquifer bounded by more or less parallel impermeable walls. Under such an interpretation the early part of the recovery would cover the period before the readjustment of water pressure had reached the boundaries of the aquifer and the remainder of the recovery would represent the extension of the readjustment linearly along the aquifer.

Monitor Well MW-1





Monitor Well Details

Date Drilled	September 20, 2018
Thickness of Bentonite Seal	3 ft
Length of PVC Well Screen	37 ft
Depth of PVC Well	105 ft
Depth of Exploratory Well	105 ft

- Grout Surface Seal - 3' to Surface
- Bentonite Pellet Seal - 40' to 3'
- Sand Pack - 40' to 105'
- Screen - 45' to 105"
- Indicates the ground water level measured on 9/20/2018.
- Indicates the ground water level measured on 9/29/2018.

Completion Notes

1. The monitor well was installed on date using Air rotary drilling techniques.
2. The well was constructed with 2" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3. The well is flush mount Style.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface.

Figure 3
MW-1 Boring Log And Monitor Well Details
Plains Pipeline, LP
Alpha Gathering Seg 3 LAT 6E Eddy County, NM

Scale: None	
CAD By: CS	
Checked By: CS	
Draft: October 21, 2018	
Lat. N 32.039236° Long. W 104.131222°	
TRC Proj. No.: 274959	

TRC
10 Desta Drive, Suite 150E
Midland, Texas 79705
432.520.7720

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701

PBELAB

Analytical Report

Prepared for:

Curt Stanley
TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland, TX 79705

Project: Screech Owl CTB
Project Number: SRS# 2017-053
Location:

Lab Order Number: 8J09010

NELAP/TCEQ # T104704516-17-8

Report Date: 10/18/18

TRC Solutions- Midland, Texas	Project: Screech Owl CTB	Fax: (432) 520-7701
10 Desta Dr STE 150E	Project Number: SRS# 2017-053	
Midland TX, 79705	Project Manager: Curt Stanley	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	8J09010-01	Water	10/08/18 14:50	10-09-2018 09:04

TRC Solutions- Midland, Texas	Project: Screech Owl CTB	Fax: (432) 520-7701
10 Desta Dr STE 150E	Project Number: SRS# 2017-053	
Midland TX, 79705	Project Manager: Curt Stanley	

MW-1

8J09010-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00100	mg/L	1	P8J1201	10/12/18	10/12/18	EPA 8021B	
Toluene	ND	0.0100	mg/L	1	P8J1201	10/12/18	10/12/18	EPA 8021B	
Ethylbenzene	ND	0.00500	mg/L	1	P8J1201	10/12/18	10/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0200	mg/L	1	P8J1201	10/12/18	10/12/18	EPA 8021B	
Xylene (o)	ND	0.0100	mg/L	1	P8J1201	10/12/18	10/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*112 %*	*80-120*		*P8J1201*	*10/12/18*	*10/12/18*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*86.6 %*	*80-120*		*P8J1201*	*10/12/18*	*10/12/18*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Total Dissolved Solids	**485000**	20.0	mg/L	1	P8J1504	10/15/18	10/16/18	EPA 160.1	

TRC Solutions- Midland, Texas	Project: Screech Owl CTB	Fax: (432) 520-7701
10 Desta Dr STE 150E	Project Number: SRS# 2017-053	
Midland TX, 79705	Project Manager: Curt Stanley	

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8J1201 - General Preparation (GC)										
Blank (P8J1201-BLK1)				Prepared & Analyzed: 10/12/18						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	*0.0642*		"	*0.0600*		*107*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.0561*		"	*0.0600*		*93.4*	*80-120*			
LCS (P8J1201-BS1)				Prepared & Analyzed: 10/12/18						
Benzene	0.102	0.00100	mg/L	0.100		102	80-120			
Toluene	0.109	0.0100	"	0.100		109	80-120			
Ethylbenzene	0.112	0.00500	"	0.100		112	80-120			
Xylene (p/m)	0.234	0.0200	"	0.200		117	80-120			
Xylene (o)	0.113	0.0100	"	0.100		113	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0641*		"	*0.0600*		*107*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.0611*		"	*0.0600*		*102*	*80-120*			
LCS Dup (P8J1201-BSD1)				Prepared & Analyzed: 10/12/18						
Benzene	0.0894	0.00100	mg/L	0.100		89.4	80-120	12.7	20	
Toluene	0.0957	0.0100	"	0.100		95.7	80-120	13.1	20	
Ethylbenzene	0.114	0.00500	"	0.100		114	80-120	1.70	20	
Xylene (p/m)	0.210	0.0200	"	0.200		105	80-120	10.7	20	
Xylene (o)	0.112	0.0100	"	0.100		112	80-120	1.31	20	
Surrogate: 4-Bromofluorobenzene	*0.0648*		"	*0.0600*		*108*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.0607*		"	*0.0600*		*101*	*80-120*			
Matrix Spike (P8J1201-MS1)	**Source: 8J09010-01**			Prepared & Analyzed: 10/12/18						
Benzene	0.0954	0.00100	mg/L	0.100	ND	95.4	80-120			
Toluene	0.104	0.0100	"	0.100	ND	104	80-120			
Ethylbenzene	0.107	0.00500	"	0.100	ND	107	80-120			
Xylene (p/m)	0.221	0.0200	"	0.200	ND	111	80-120			
Xylene (o)	0.112	0.0100	"	0.100	ND	112	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0735*		"	*0.0600*		*123*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.0671*		"	*0.0600*		*112*	*80-120*			

TRC Solutions- Midland, Texas	Project: Screech Owl CTB	Fax: (432) 520-7701
10 Desta Dr STE 150E	Project Number: SRS# 2017-053	
Midland TX, 79705	Project Manager: Curt Stanley	

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8J1201 - General Preparation (GC)										
Matrix Spike Dup (P8J1201-MSD1)	**Source: 8J09010-01**			Prepared & Analyzed: 10/12/18						
Benzene	0.0946	0.00100	mg/L	0.100	ND	94.6	80-120	0.863	20	
Toluene	0.105	0.0100	"	0.100	ND	105	80-120	0.730	20	
Ethylbenzene	0.115	0.00500	"	0.100	ND	115	80-120	6.67	20	
Xylene (p/m)	0.217	0.0200	"	0.200	ND	109	80-120	1.67	20	
Xylene (o)	0.112	0.0100	"	0.100	ND	112	80-120	0.00894	20	
Surrogate: 4-Bromofluorobenzene	*0.0730*		"	*0.0600*		*122*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.0635*		"	*0.0600*		*106*	*80-120*			

TRC Solutions- Midland, Texas
10 Desta Dr STE 150E
Midland TX, 79705

Project: Screech Owl CTB
Project Number: SRS# 2017-053
Project Manager: Curt Stanley

Fax: (432) 520-7701

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8J1504 - * DEFAULT PREP *** **										
Blank (P8J1504-BLK1)				Prepared: 10/15/18 Analyzed: 10/16/18						
Total Dissolved Solids	ND	20.0	mg/L							
Duplicate (P8J1504-DUP1)	Source: 8J09011-02			Prepared: 10/15/18 Analyzed: 10/16/18						
Total Dissolved Solids	250	20.0	mg/L		240			4.08	20	

TRC Solutions- Midland, Texas	Project: Screech Owl CTB	Fax: (432) 520-7701
10 Desta Dr STE 150E	Project Number: SRS# 2017-053	
Midland TX, 79705	Project Manager: Curt Stanley	

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
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
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 10/18/2018

Brent Barron, Laboratory Director/Technical Director

PBELAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-686-7235

Project Manager: Curt Stanley
Company Name: TRC Solutions
Company Address: 10 Desta Drive
City/State/Zip: Midland Tx 79705
Telephone No: (432) 520-7720 Fax No:
Sampler Signature: e-mail:

Project Name: Screech Owl
Project #:
Project Loc:
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 8509010

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH by TX 1005 8015B 8015M	Chloride	BTEX by 8021B	TDS	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW1			10-8-18	1450		3	X		X						GW			X			X
	MW1			10-8-18	1450		1	X								GW				X		X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Mary	10-9-18	9:00			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by PBEL:	Date	Time
			Carolyn Pearson	10/9	9:04

Laboratory Comments:
Sample Containers Intact? N
VOCs Free of Headspace? N
Labels on container(s) N
Custody seals on container(s) N
Custody seals on cooler(s) N
Sample Hand Delivered by Sampler/Client Rep. ? N
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt:
Received: 0.1 °C
Adjusted: 0.1 °C Factor

APPENDIX F

NEW MEXICO OIL CONSERVATION DIVISION VARIANCE EMAIL APPROVAL

Jeff Kindley

From: Amber L Groves <ALGroves@paalp.com>
Sent: Thursday, April 9, 2020 9:49 AM
To: Sylwia Reynolds; Jeff Kindley
Subject: FW: NVV2003536983-Plains COG Craig State 3H Variance Request

Syl and Jeff,

Here is the variance approval for COG Craig from NMOCD.

Thank you,

Amber

From: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Sent: Tuesday, April 7, 2020 1:33 PM
To: Amber L Groves <ALGroves@paalp.com>
Cc: Camille J Bryant <CJBryant@paalp.com>
Subject: RE: NVV2003536983-Plains COG Craig State 3H Variance Request [External]

04/07/2020

Camille Bryant – Plains
Amber Groves – Plains

Re Variance Request for Final Vertical Delineation of TPH.

Variance for the following:

1) Approval of request to terminate via variance, for now, the requirement to evaluate TPH to 100 ppm, is approved. When site is cleared for additional work in future this will need to be accomplished. Allowable for now as depth to water is in the vicinity of 90 feet below ground surface, and infrastructure precludes drilling rig.
2) Excavate to 3 feet, deemed safe, relative to infrastructure is Approved. May eventually need to go full four feet.
3) The Oil Conservation Division (OCD) does not require a liner at bottom of excavation in this circumstance.

OCD anticipates a deferral request through the pay portal when work approved is finished, as more work will need to be accomplished in future.

Please keep a copy of this communication, as no paper copy will follow. OCD thanks you for your efforts.

Sincerely,

Bradford Billings
EMNRD/OCD
Albuquerque, NM

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

Liner, yes, no

Ex to 3 feet okay on depth to eval, even being high karst, too mush infrastructure in the way

Expect a deferral for site on 141 through portal

From: Amber L Groves <ALGroves@paalp.com>
Sent: Monday, April 6, 2020 2:59 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Camille J Bryant <CJBryant@paalp.com>
Subject: [EXT] FW: NVV2003536983-Plains COG Craig State 3H Variance Request

Bradford,

Here is the variance request that I spoke to you about this afternoon. Hope things are going well up north!

Thank you,

Amber

From: Amber L Groves
Sent: Tuesday, March 10, 2020 2:20 PM
To: 'cristina.eads@state.nm.us' <cristina.eads@state.nm.us>; 'robert.hamlet@state.nm.us' <robert.hamlet@state.nm.us>; 'victoria.venegas@state.nm.us' <victoria.venegas@state.nm.us>
Cc: 'mike.bratcher@state.nm.us' <mike.bratcher@state.nm.us>; 'Bradford.Billings@state.nm.us' <Bradford.Billings@state.nm.us>; Camille J Bryant <CJBryant@paalp.com>
Subject: NVV2003536983-Plains COG Craig State 3H Variance Request

Good Afternoon,

On January 11, 2020, Plains had a crude oil release of approximately 8 bbls at the COG Craig State 3H and the C-141 was filed with NMOCD on January 15, 2020. OCD assigned this release #NVV2003536983 on February 4, 2020. Initial delineation activities at the release site commenced on January 15, 2020. Soil sample results can be found in the attached Chemistry Table. Soil sample AH-3 was advanced to a terminal depth of approximately7 ft, where resistance was met. The soil sample AH-3 @ 7' exhibited a TPH concentration of 731.4 mg/kg .

On September 20, 2018, Plains installed a monitor well approximately 3.42 miles southeast of the COG Craig State 3H at the COG Screech Owl CTB. Depth to water was determined to be approximately 93 feet bgs. A groundwater sample was collected on October 8, 2018 and analyzed for total dissolved solids (TDS). The analytical results indicated the TDS concentration was 485,000 mg/L. This result exceeds the NMOCD and New Mexico Water Quality Control Commission (NMWQCC) standard of 10,000 mg/L for abatable water. Please find attached the boring log and the analytical results

from the groundwater sample collected from the monitor well. Also attached is published /pertinent information regarding the groundwater in the area. While Plains acknowledges the site is located in a high karst area as shown on the attached map, we respectfully request a variance for vertical delineation based on the downward trend of TPH concentrations collected from soil samples AH-3 @1' through AH-3 @7 ', the impermeable layer and the close proximity of numerous structures, being sufficed at the 731.4 mg/kg TPH based on the provided information.

The majority of the release area is confined to Plains' LACT unit. Due to the nature of equipment and plethora of pipeline and conduit found in the release area, Plains is also requesting a variance to excavate to 3' bgs and install a 20-mil polyethylene liner. Please see attached photos showing the limited access in the LACT area.

Thank you and please feel free to give me a call at the number below should you have any questions.

Amber L. Groves
Remediation Coordinator
Plains All American
3112 W. US Hwy 82
Lovington, NM 88260
575-200-5517

Attention:
The information contained in this message and/or attachments is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you received this in error, please contact the Plains Service Desk at 713-646-4444 and delete the material from any system and destroy any copies.

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

APPENDIX G

NEW MEXICO OIL CONSERVATION DIVISION DEFERRAL EMAIL DENIED (11-19-20 & 02-01-21)

State of New Mexico
Oil Conservation Division

Incident ID	NVV2003536983
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Amber Groves Title: Remediation Coordinator

Signature: Amber Groves Date: 7/23/2020

email: algroves@paalp.com Telephone: (575)200-5517

OCD Only

Received by: Robert Hamlet Date: 11/18/2020

☐ Approved ☐ Approved with Attached Conditions of Approval ☒ Denied ☐ Deferral Approved

Signature: Deferral Denied Date: 11/18/2020

Jeff Kindley

From: Amber L Groves <ALGroves@paalp.com>
Sent: Monday, February 1, 2021 2:51 PM
To: Jeff Kindley
Subject: FW: Deferral Denied - Plains Pipeline - COG Craig St #3H - (Incident #NVV2003536983)
Attachments: Deferral Denied - Plains Pipeline - COG Craig St #3H - (Incident #NVV2003536983).pdf

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Thursday, November 19, 2020 10:01 AM
To: Amber L Groves <ALGroves@paalp.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Eads, Cristina, EMNRD <Cristina.Eads@state.nm.us>; CFO_Spill, BLM_NM <BLM_NM_CFO_Spill@blm.gov>
Subject: Deferral Denied - Plains Pipeline - COG Craig St #3H - (Incident #NVV2003536983) [External]

Amber,

We have received your Deferral Request for **Incident #NVV2003536983 COG Craig St #3H**, thank you. The Deferral request is denied.

Before we can approve a deferral the spill must be fully delineated. As you stated in your report, "the NMOCD restoration and cleanup levels for soils impacted by hydrocarbons with high karst topography is 100 mg/Kg for TPH". It appears that Brad Billings has approved a variance to "Excavate to 3 feet, deemed safe, relative to infrastructure is Approved". Removal of the contaminated soil over 100 mg/kg will need to be accomplished after the site is cleared for additional work.

- The report says, "Due to limited accessibility, the site was excavated to a maximum depth of three (3) ft bgs at which point limestone rock was encountered thus preventing further vertical hand excavation of site. Vertical delineation is in agreement with Brad Billings variance approval at this time. Although, horizontal delineation has not been accomplished. Please continue to horizontally delineate sample points to 100 mg/kg for TPH on the outer edges/periphery and include sample points in your next report after closure criteria limits have been met. While vertical definition of contamination that may be acceptable is almost exclusively driven by depth to water, as determined, and as driven by Table I in rule, horizontal definition is different. The edges (horizontal definition) of a liquid release must be determined as well. Generally, the top one foot sample suffices for immediate horizontal evaluation and deeper contamination would likely be identified during actual remediation. Due to the high karst, conduct sampling away from the LACT unit in North, South, and Easterly direction until the surface delineation samples are below 100 mg/kg for TPH. Please, include the horizontal delineation samples in your revised deferral report.

Please, let me know if you have any questions.

Thank you,

Robert Hamlet • Environmental Eng. Tech. III
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210

505.748.1283 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

APPENDIX H

NEW MEXICO OIL CONSERVATION DIVISION DEFERRAL EMAIL DENIED (07-06-21)

Jeff Kindley

From: Amber L Groves <ALGroves@paalp.com>
Sent: Monday, August 23, 2021 2:45 PM
To: Jeff Kindley
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 18268

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Tuesday, July 6, 2021 12:30 PM
To: Amber L Groves <ALGroves@paalp.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 18268 [External]

To whom it may concern (c/o Amber Groves for PLAINS MARKETING L.P.),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nVV2003536983,
for the following reasons:

- **We have received your Deferral Request for Incident #NVV2003536983 COG Craig St #3H, thank you. The Deferral request is denied. Before we can approve a deferral, the spill must be fully delineated. Auger hole AH-5 needs further delineation to the east below 100 mg/kg. This release cannot be closed until the contaminated soil is delineated and the remediation and restoration have taken place. One the well or facility is plugged or abandoned, the contaminated soil must be excavated and removed to meet OCD Table 1 standards in the spill rule. In addition, the contamination must not pose an imminent risk to human health, the environment, or groundwater. Deferrals are not forever and remediation must be completed in a timely fashion once the equipment is out of use for oil and gas operations.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 18268.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you received this in error, please contact the Plains Service Desk at 713-646-4444 and delete the material from any system and destroy any copies.

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 45255

CONDITIONS

Operator: PLAINS MARKETING L.P. 333 Clay St, Ste 1600 Houston, TX 77002	OGRID: 34053
	Action Number: 45255
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	Plain's deferral requests to complete final remediation of impacted soil adjacent to the LACT unit during any future major deconstruction/alteration and/or abandonment, whichever occurs first. At this time, OCD approves the request. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue. This is a Federal site and will require like approval from BLM. In response to your risk-based closure request, this release cannot be closed until the contaminated soil is remediated and full restoration has taken place.	1/12/2022