Pima Environmental Services, LLC
5614 N. Lovington Hwy.
Hobbs, NM 88240
575-964-7740

November 29th, 2022

NMOCD District 2
811 S. First Street
Artesia, NM 88210

Re: Site Assessment, Remediation, and Closure Report
Ruth 20 #002
API No. 30-025-36866
GPS: Latitude 32.91326 Longitude -103.38241
UL "D", Sec. 20, T16S, R36E
Lea County, NM
NMOCD Ref. No. NAPP2118726438

Pima Environmental Services, LLC (Pima) has been contracted by Armstrong Energy Corporation to perform a spill assessment, remediation activities, and submit this closure report for a produced water release that occurred at the Ruth 20 #002. The initial C-141 was submitted on September 8th, 2022 (Appendix C). This incident was assigned Incident ID NAPP2118726438, by the New Mexico Oil Conservation Division (NMOCD).

Site Characterization

The Ruth 20 #002 is located approximately three and a half (3.5) miles southwest of Lovington, NM. This spill site is in Unit D, Section 20, Township 16S, Range 36E, Latitude 32.91326, Longitude -103.38241, Lea County, NM. Figure 1 references a Location map.

Per the New Mexico Bureau of Geology and Mineral Resources, the geology is in the Ogallala Formation (Lower Pliocene to Middle Miocene). The soil in this area is made up of Portales loam, 0 to 1 percent slopes according to the United States Department of Agriculture Natural Resources Conservation Service soil survey (Appendix B). The drainage courses in this area are well-drained. There is a low potential for karst geology to be present around the Ruth 20 #002 (Figure 3).

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 90 feet below grade surface (BGS). According to the United States Geological Survey (USGS), the nearest groundwater is 66.54 feet BGS. The closest waterway is a manmade pond located approximately 4.2 miles to the northeast of this location. See Appendix A for referenced water surveys.

Table 1 NMAC and Closure Criteria 19.15.29					
Depth to Groundwater (Appendix A)	Constituent & Limits				
	Chlorides	Total TPH	GRO+DRO	BTEX	Benzene
<50'	600 mg/kg	100 mg/kg		50 mg/kg	10 mg/kg
51-100'	10,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg
>100'	20,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg

Reference Figure 2 for a Topographic map.

Release Information

NAPP2118726438: On July 5th, 2021, a lightning strike caused a fire leading to a produced water spill out of a water tank, 170-barrels of produced water was released. Armstrong personnel responded to the incident and managed to recover 40 barrels of produced water.

Site Assessment and Soil Sampling Results

On September 15th, 2022, Pima Environmental Services mobilized personnel to the site to conduct delineation activities. When Pima personnel arrived on scene, we noted all storage tanks have been removed. Pima sampled the area between the point of release and areas surrounding the previous storage tank containment.

On November 17th, 2022, upon NMOCD request (Appendix C), Pima Environmental returned to location to collect additional soil samples. Soil samples SW5-SW8 were collected to achieve horizontal delineation of the proposed release area. Laboratory results of this sampling event can be found in the following data table.

9-15-22 and 11-17-2022 Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is 50-100')									
ARMSTRONG ENERGY CORPORATION - RUTH 20 #002									
NM Approved Laboratory Results									
Sample ID	Date Sampled	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
S-1	9/15/2022	1'	ND	ND	ND	ND	ND	0	2490
		2'	ND	ND	ND	ND	ND	0	81.2
S-2		1'	ND	ND	ND	ND	ND	0	1830
		2'	ND	ND	ND	ND	ND	0	88
S-3		1'	ND	ND	ND	ND	ND	0	2060
		2'	ND	ND	ND	ND	ND	0	53.2
S-4		1'	ND	ND	ND	ND	ND	0	1110
		2'	ND	ND	ND	ND	ND	0	97.8
S-5		1'	ND	ND	ND	ND	ND	0	2290
		2'	ND	ND	ND	ND	ND	0	37.8
S-6		1'	ND	ND	ND	ND	ND	0	2310
		2'	ND	ND	ND	30.4	ND	30.4	92.2
S-7		1'	ND	ND	ND	ND	ND	0	2300
		2'	ND	ND	ND	ND	ND	0	89.7
S-8		1'	ND	ND	ND	ND	ND	0	2730
		2'	ND	ND	ND	ND	ND	0	88.3
SW 1		6"	ND	ND	ND	ND	ND	0	ND
SW 2		6"	ND	ND	ND	ND	ND	0	ND
SW 3		6"	ND	ND	ND	ND	ND	0	ND
SW 4		6"	ND	ND	ND	ND	ND	0	ND
SW 5	11/17/2022	6"	ND	ND	ND	ND	ND	0	ND
SW 6		6"	ND	ND	ND	ND	ND	0	ND
SW 7		6"	ND	ND	ND	ND	ND	0	ND
SW 8		6"	ND	ND	ND	ND	ND	0	ND
BG 1	9/15/2022	6"	ND	ND	ND	ND	ND	0	68.6
BG 2		6"	ND	ND	ND	ND	ND	0	61.3

ND: Non-Detect

Remediation Activities

Due to analytical levels falling below NMOCD closure criteria, no further immediate action is required. Pima Environmental will address any superficial staining surrounding the affected area.

Complete laboratory reports can be found in Appendix E.

Closure Request

After careful review, Pima requests that this incident, NAPP2118726438, be closed. Armstrong Energy Corporation has complied with the applicable closure requirements set forth in rule 19.15.19.12 NMAC.

Should you have any questions or need additional information, please feel free to contact Sebastian Orozco at 619-721-4813 or Sebastian@pimaoil.com.

Respectfully,

Sebastian Orozco

Sebastian Orozco
Environmental Project Manager
Pima Environmental Services, LLC

Attachments

Figures:
1- Location Map
2- Topographic Map
3- Karst Map
4- Site Map

Appendices:
Appendix A – Referenced Water Surveys
Appendix B – Soil Survey and Geological Data
Appendix C – C-141 and Correspondence
Appendix D – Photographic Documentation
Appendix E – Laboratory Reports

Pima Environmental Services

Figures:

1-Location Map

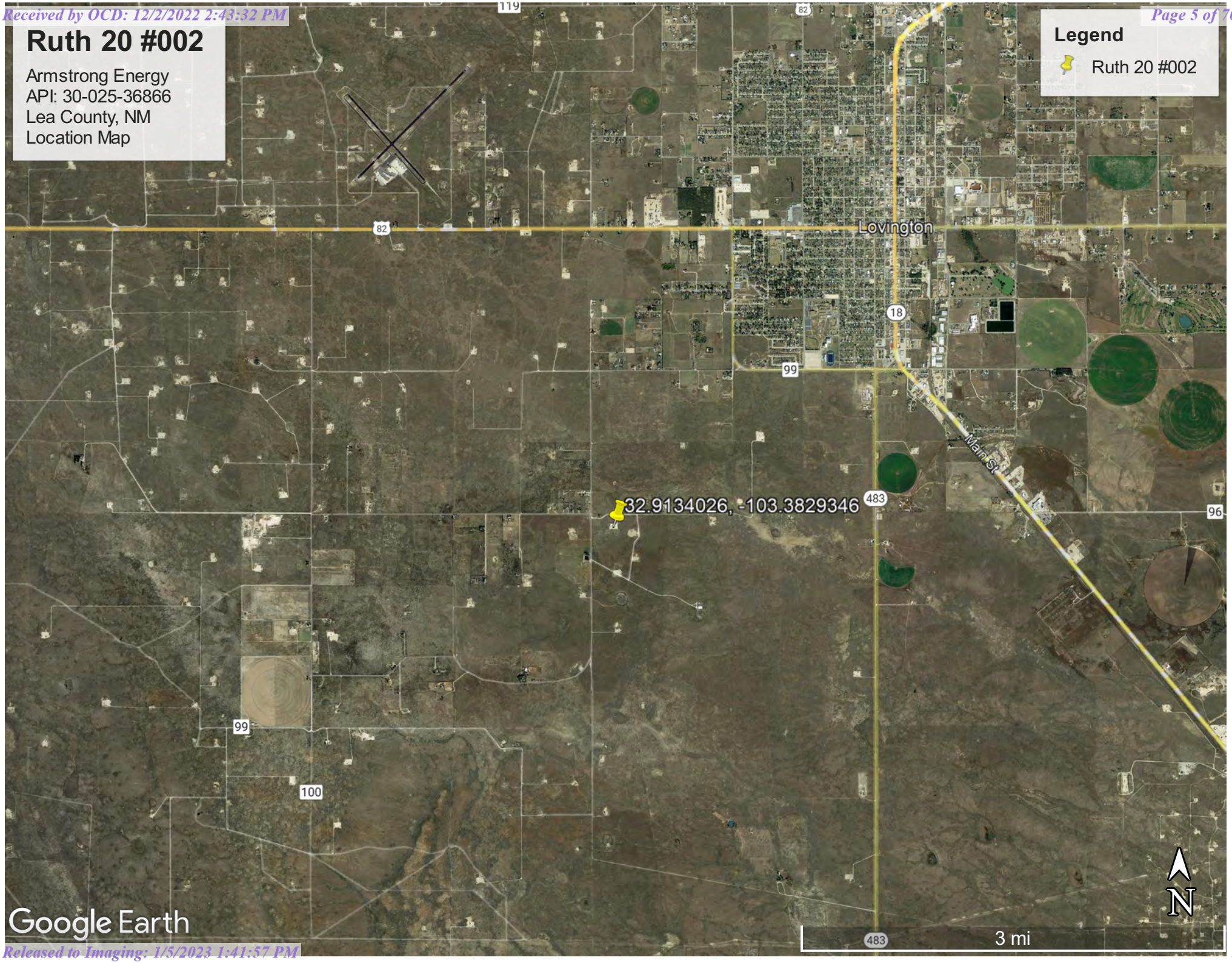
2-Topographic Map

3-Karst Map

4-Site Map

Ruth 20 #002

Armstrong Energy
API: 30-025-36866
Lea County, NM
Location Map

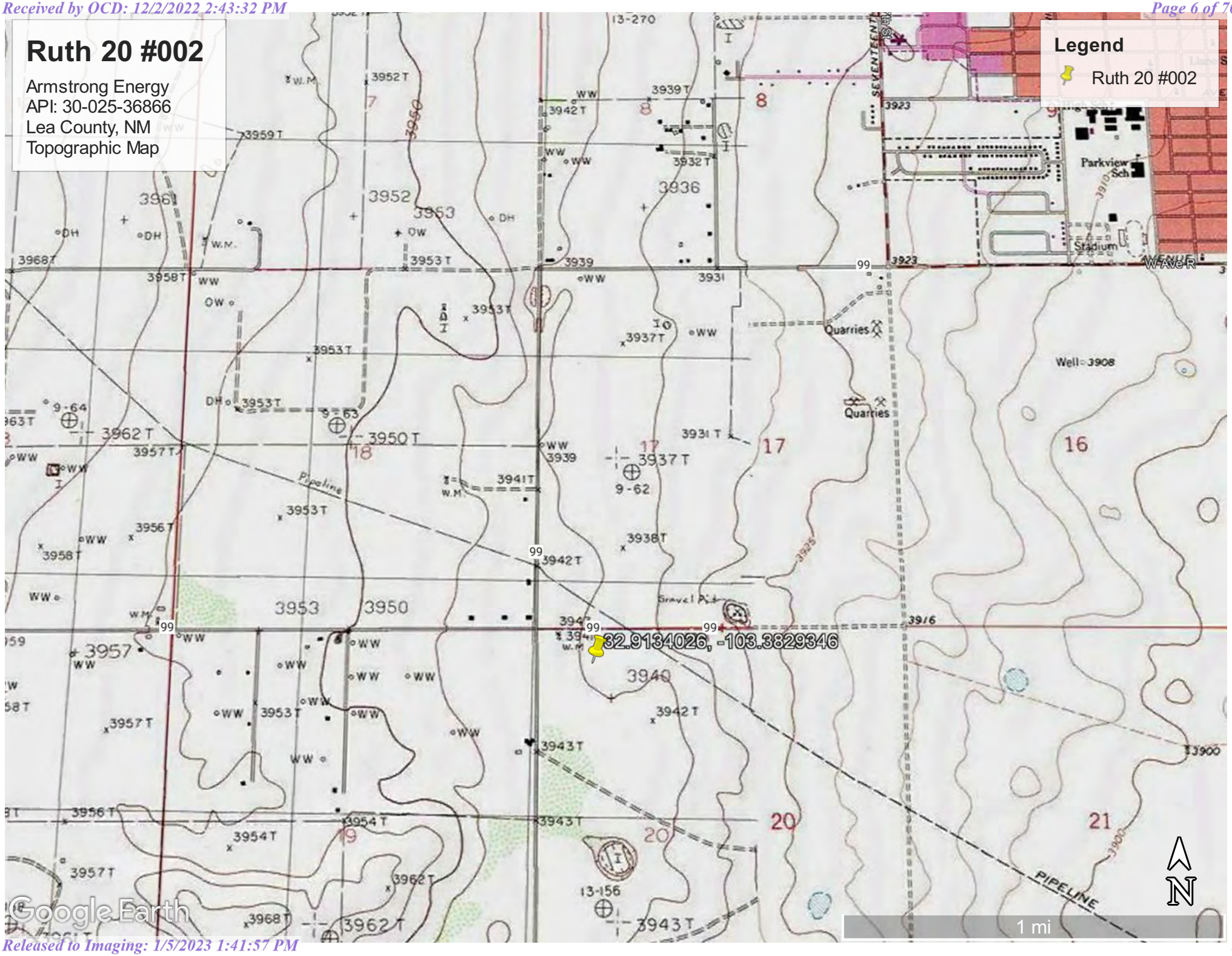


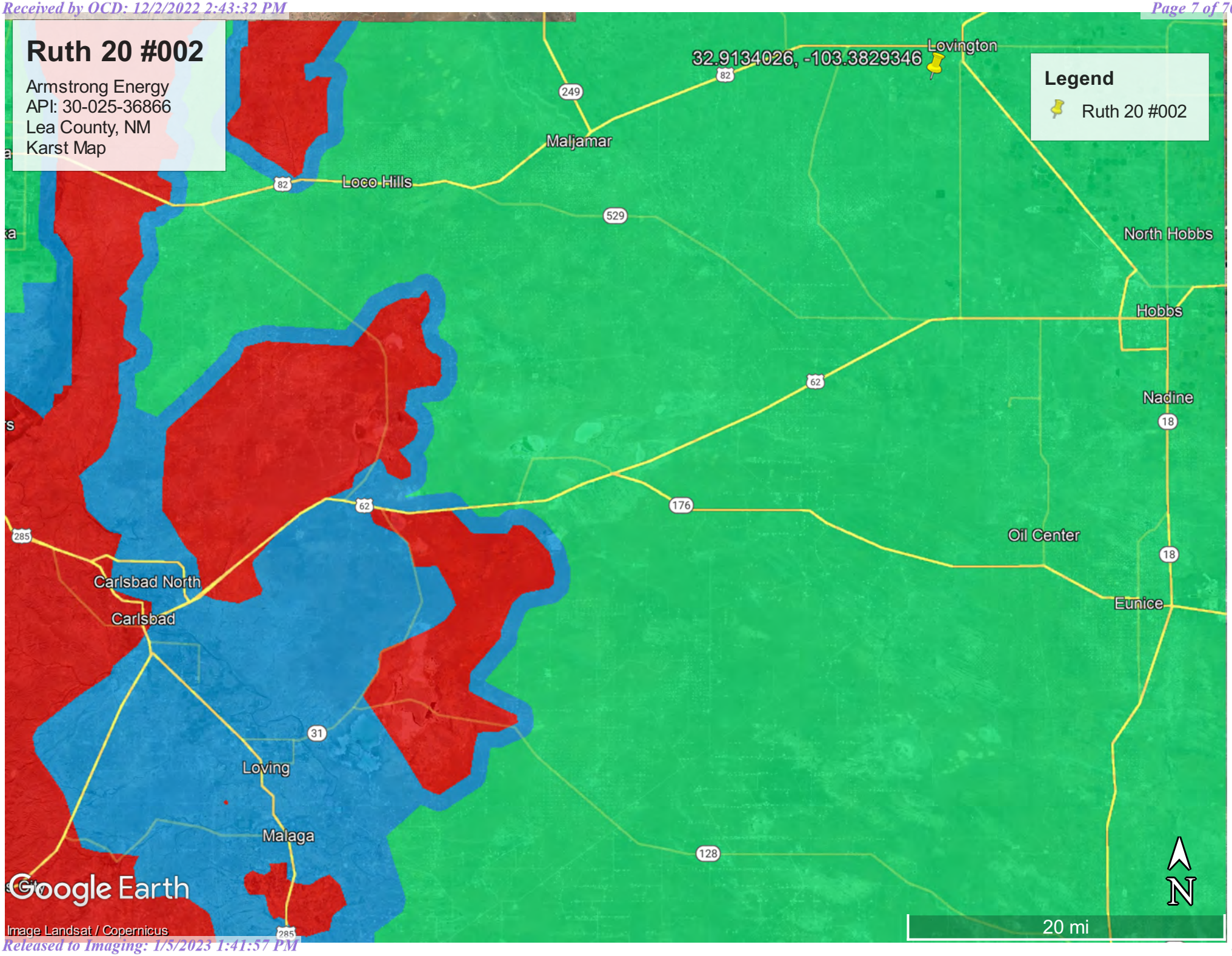
Ruth 20 #002

Armstrong Energy
API: 30-025-36866
Lea County, NM
Topographic Map

Legend

Ruth 20 #002



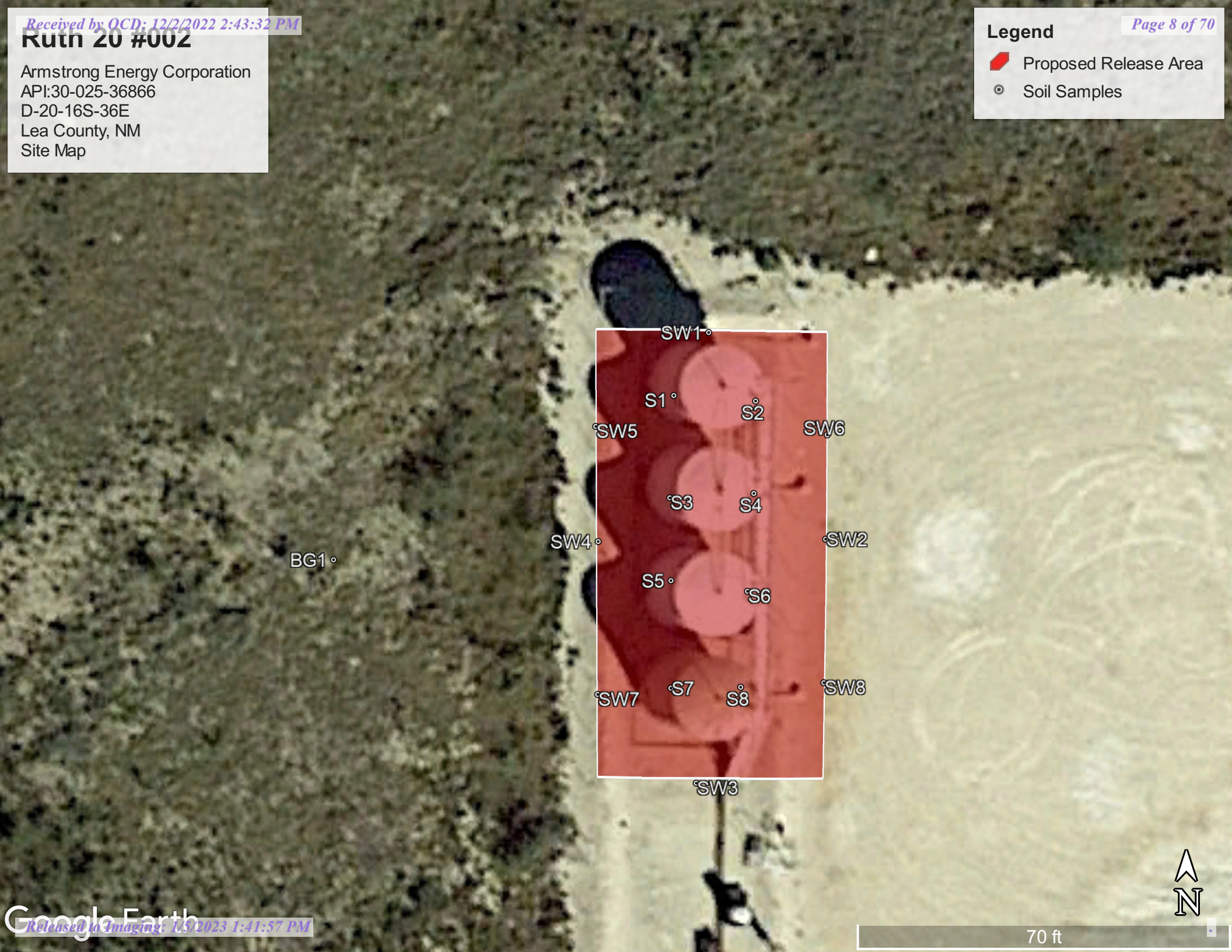

Ruth 20 #002
Armstrong Energy
API: 30-025-36866
Lea County, NM
Karst Map
32.9134026, -103.3829346
Lovington
Legend
Ruth 20 #002
Maljamar
Loco Hills
North Hobbs
Hobbs
Nadine
Oil Center
Eunice
Carlsbad North
Carlsbad
Loving
Malaga
82
249
529
62
176
18
285
31
128
Google Earth
Image Landsat / Copernicus
20 mi
N

Ruth 20 #002

Armstrong Energy Corporation
API:30-025-36866
D-20-16S-36E
Lea County, NM
Site Map

Legend

- Proposed Release Area
- Soil Samples



Pima Environmental Services

Appendix A

Water Surveys:

OSE

USGS

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	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 08898		L	LE	4	1	1	20	16S	36E	651269	3642693*	161	147	70	77
L 06937		L	LE	4	2	2	19	16S	36E	650867	3642686*	383	110	69	41
L 06963		L	LE	4	4	4	18	16S	36E	650861	3643089*	430	120	80	40
L 07063		L	LE	2	4	4	18	16S	36E	650861	3643289*	567	120	80	40
L 06982		L	LE		4	4	18	16S	36E	650762	3643190*	569	120	72	48
L 04437		L	LE			3	17	16S	36E	651365	3643398*	571	120	95	25
L 15142 POD1		L	LE	3	4	4	18	16S	36E	650616	3643048	633	165	90	75
L 13746 POD1		L	LE	3	4	4	18	16S	36E	650553	3643011	683	123	60	63
L 00209 POD5		L	LE	3	2	3	17	16S	36E	651460	3643506*	703	127	83	44
L 13994 POD1		L	LE	4	3	4	18	16S	36E	650460	3643073	789	137	63	74
L 00209 POD7		L	LE		3	4	17	16S	36E	651972	3643212*	839	128	72	56
L 07649 POD4		L	LE		3	4	17	16S	36E	651972	3643212*	839	140	69	71
L 00150 POD4		L	LE		1	2	19	16S	36E	650366	3642780*	852	95		
L 07442		L	LE				20	16S	36E	651793	3642188*	875	130		
L 06132		L	LE		2	4	18	16S	36E	650755	3643593*	877	98	70	28
L 10712		L	LE		2	4	18	16S	36E	650755	3643593*	877	165	60	105
L 00150		L	LE	1	1	2	19	16S	36E	650265	3642879*	951	125		
L 00150 S		L	LE	3	1	2	19	16S	36E	650265	3642679*	965	80		
L 07444		L	LE	1	3	2	19	16S	36E	650271	3642476*	1014	178	120	58
L 04598		L	LE	1	2	4	18	16S	36E	650654	3643692*	1015	136	75	61
L 06934		L	LE	1	2	4	18	16S	36E	650654	3643692*	1015	118	68	50
L 06935		L	LE	1	2	4	18	16S	36E	650654	3643692*	1015	120	72	48
L 10572		L	LE	1	2	2	20	16S	36E	652282	3642915*	1068	150	70	80
L 00209 S		L	LE	3	3	1	17	16S	36E	651050	3643902*	1069	100	60	40
L 07649		L	LE				17	16S	36E	651767	3643800*	1101	140	72	68
L 00268 POD4		L	LE	2	2	1	19	16S	36E	650063	3642872*	1153	100	62	38
L 00209 S2		L	LE		3	1	17	16S	36E	651151	3644003*	1158	173	68	105
L 00209 S2	R	L	LE		3	1	17	16S	36E	651151	3644003*	1158	173	68	105
L 00268 POD5		L	LE	4	2	1	19	16S	36E	650063	3642672*	1166	100	58	42
L 14659 POD1		L	LE	2	4	1	19	16S	36E	650072	3642584	1173	165	130	35
L 00268 POD6		L	LE	2	4	1	19	16S	36E	650069	3642469*	1207	116	58	58
L 02783		L	LE	2	4	1	19	16S	36E	650069	3642469*	1207	80	50	30
L 00268 S		L	LE				19	16S	36E	650216	3642161*	1212	79	45	34

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Attention current WaterAlert users: NextGen WaterAlert is replacing Legacy WaterAlert. You must take action before 9/30/2022 to retain your alerts. Read more.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 325402103232601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 325402103232601 16S.36E.19.41333

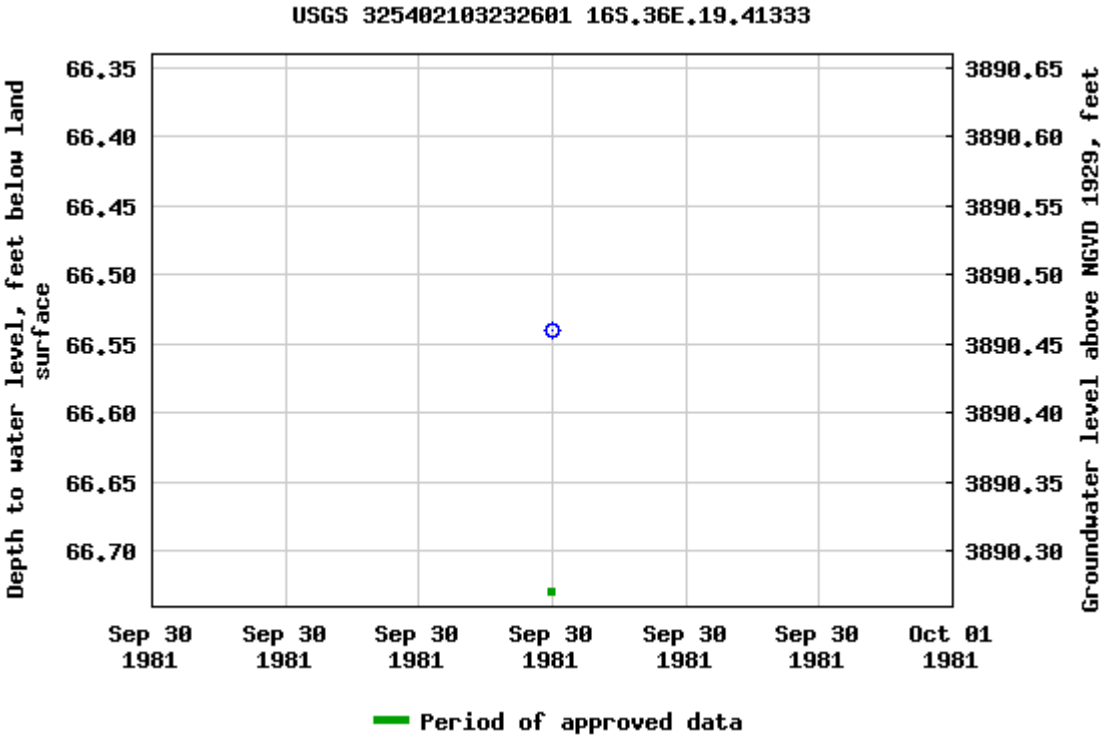
Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 12080003
Latitude 32°54'14", Longitude 103°23'36" NAD27
Land-surface elevation 3,957.00 feet above NGVD29

The depth of the well is 130 feet below land surface.
This well is completed in the High Plains aquifer (N100HGHPLN) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2022-09-15 12:11:51 EDT
0.56 0.49 nadww02

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands Map

September 15, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Pima Environmental Services

Appendix B

Soil Survey & Geological Data

FEMA Flood Map

Lea County, New Mexico

Ph—Portales loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: f5t2
Elevation: 2,600 to 5,300 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 185 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Portales and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Portales

Setting

Landform: Playa steps, interdunes, plains
Down-slope shape: Convex, linear, concave
Across-slope shape: Linear
Parent material: Calcareous loamy eolian deposits and/or lacustrine deposits

Typical profile

Ap - 0 to 15 inches: loam
Bk1 - 15 to 35 inches: clay loam
Bk2 - 35 to 43 inches: loam
Bkk - 43 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Minor Components

Midessa
Percent of map unit: 10 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Posey
Percent of map unit: 3 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Acuff
Percent of map unit: 2 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R077CY022TX - Deep Hardland 16-21" PZ
Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 18, Sep 10, 2021

National Flood Hazard Layer FIRMette

FEMA

103°23'17"W 32°55'3"N

103°22'40"W 32°54'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/15/2022 at 12:17 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Pima Environmental Services

Appendix C

C-141 Form
Correspondence

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	nAPP2118726438
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible: Party Armstrong Energy Corporation	OGRID
Contact Name: Kyle Alpers	Contact Telephone: 575-626-2727
Contact email: kalpers@aecnm.com	Incident # *(assigned by OCD);* nAPP2118726438
Contact mailing address	

Location of Release Source

Latitude 32.91326 Longitude -103.38241
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Ruth 20 #002	Site Type: Oil
Date Release Discovered: 07/05/2021	API# *(if applicable):* 30-025-36866

Unit Letter	Section	Township	Range	County
D	20	16S	36E	Lea

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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): 170	Volume Recovered (bbls): 40
	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:
A lightning strike caused a fire leading to a produced water spill out of a water tank.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2118726438
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? **This is considered a major release because it is over 25 BBLS.**

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Yes, Kyle Alpers to Kerry Fortner on 7/5/2021 via phone/Email

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: Jeffery Tew Title: Operations Engineer

Signature: Jeffery Tew Date: 9/8/2022

email: jtew@aecnm.com Telephone: 575-625-2222

OCD Only

Received by: Jocelyn Harimon Date: 09/08/2022

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2118726438
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	90 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2118726438
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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2118726438
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jeffery Tew Title: Operations Engineer

Signature: Jeffery Tew Date: 12/2/2022

email: jtew@aecnm.com Telephone: 575-625-2222

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jennifer Nobui Date: 01/05/2023

Printed Name: Jennifer Nobui Title: Environmental Specialist A

Sebastian@pimaoil.com

From: Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Sent: Tuesday, November 15, 2022 3:03 PM
To: sebastian@pimaoil.com
Cc: Bratcher, Michael, EMNRD; Billings, Bradford, EMNRD
Subject: RE: [EXTERNAL] Ruth 20 #002 (NAPP2118726438)

Yes

From: sebastian@pimaoil.com <sebastian@pimaoil.com>
Sent: Tuesday, November 15, 2022 2:59 PM
To: Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Subject: RE: [EXTERNAL] Ruth 20 #002 (NAPP2118726438)

Thank you for getting back to me so promptly. If I am understanding correctly, would an additional four side wall samples (West of S1 and S7, East of S2 and S8) be sufficient?

Respectfully,
Sebastian Orozco

From: Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Sent: Tuesday, November 15, 2022 2:18 PM
To: sebastian@pimaoil.com
Cc: Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Subject: FW: [EXTERNAL] Ruth 20 #002 (NAPP2118726438)

Hello Sebastian

OCD requires the release to be delineated laterally to the strictest criteria (600 mg/mg chloride, 100 mg/kg TPH, etc) to define the edges of the release, even on pad regardless of depth to water. While you provided 4 lateral delineation points (SW1, SW2, SW3, & SW4), locations S1, S2, S7, & S8 had elevated chloride detections (>600 mg/kg) at 1'. There were no lateral step out delineation points west of S1 or east of S2, etc, to verify the release had been sufficiently delineated. I used data from SW2 and SW4 to cover lateral delineation points for S3 through S6. To close this case out, we need delineation to be completed. Please let me know if you have any questions.

Thanks,

Jennifer Nobui, PG • Environmental Specialist A
Environmental Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue N.E Suite 100 | Albuquerque, NM 87113
505.470-3407 | Jennifer.Nobui@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: sebastian@pimaoil.com <sebastian@pimaoil.com>
Sent: Friday, November 11, 2022 3:27 PM

To: Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>
Subject: [EXTERNAL] Ruth 20 #002 (NAPP2118726438)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good Afternoon,

It has come to my attention that incident number NAPP2118726438, pertaining to the Ruth 20 #002 location belonging to Armstrong Energy Corporation has been rejected. Can you please elaborate on what the requirements for closure pertain to? In the OCD portal it says, "Closure Report Denied. Sidewall samples should be delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Additional data is needed at S-1, S-2, S-7, and S-8 at 1' to show lateral delineation. Also report states release was due to a lightning strike on 1/4/08 but C-141 states 7/5/21. Please clarify. Please resubmit a revised Closure Report to the OCD portal by December 9, 2022". I am kind of confused, our analytical results indicate non-detect levels for all four side wall samples; as well as vertical delineation demonstrated by samples S1-S8. I've attached a site map including all sample points, as well as a polygon outlining the potential release area. Keep in mind this tank battery has been removed, the area that was sampled is caliche from the engineered pad underlying the previous containment. If you could please shine some light on how to close this incident, I would really appreciate it. Thank you much, have a great weekend.

Respectfully,
Sebastian Orozco
Environmental Professional
5614 N Lovington Hwy,
Hobbs, NM 88240
Sebastian@pimaoil.com
619-721-4813 cell
Pima Environmental Services, LLC

Pima Environmental Services

Appendix D

Photographic Documentation

SITE PHOTOGRAPHS
PIMA ENVIORNMENTAL

Ruth 20 #002

Pima Environmental Services

Appendix E

Laboratory Reports

Report to:

Tom Bynum

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Pima Environmental Services-Carlsbad

Project Name:	Ruth 20 #2
Work Order:	E209119
Job Number:	22093-0001
Received:	9/21/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
9/27/22

Date Reported: 9/27/22

Tom Bynum
PO Box 247
Plains, TX 79355-0247

Project Name: Ruth 20 #2
Workorder: E209119
Date Received: 9/21/2022 10:45:00AM

Tom Bynum,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 9/21/2022 10:45:00AM, under the Project Name: Ruth 20 #2.

The analytical test results summarized in this report with the Project Name: Ruth 20 #2 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

Alexa Michaels
Sample Custody Officer
Office: 505-632-1881
labadmin@envirotech-inc.com

Field Offices:

Southern New Mexico Area
Lynn Jarboe
Technical Representative/Client Services
Office: 505-421-LABS(5227)
Cell: 505-320-4759
ljarboe@envirotech-inc.com

West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

Table of Contents

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Sample Summary

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	09/27/22 16:18

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
S.1 1'	E209119-01A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.1 2'	E209119-02A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.2 1'	E209119-03A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.2 2'	E209119-04A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.3 1'	E209119-05A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.3 2'	E209119-06A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.4 1'	E209119-07A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.4 2'	E209119-08A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.5 1'	E209119-09A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.5 2'	E209119-10A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.6 1'	E209119-11A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.6 2'	E209119-12A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.7 1'	E209119-13A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.7 2'	E209119-14A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.8 1'	E209119-15A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
S.8 2'	E209119-16A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
SW1	E209119-17A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
SW2	E209119-18A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
SW3	E209119-19A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
SW4	E209119-20A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
BG1	E209119-21A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.
BG2	E209119-22A	Soil	09/15/22	09/21/22	Glass Jar, 4 oz.

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.1 1'

E209119-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*102 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*91.2 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*102 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*91.2 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*86.7 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2490**	200	10	09/23/22	09/23/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.1 2'

E209119-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*97.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.7 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*97.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.7 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*88.9 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**81.2**	20.0	1	09/23/22	09/23/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.2 1'

E209119-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.0 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*89.3 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.0 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*89.3 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*91.5 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**1830**	100	5	09/23/22	09/23/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.2 2'

E209119-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.8 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.4 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.8 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.4 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*92.5 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**88.0**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.3 1'

E209119-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*87.3 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2060**	200	10	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.3 2'

E209119-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.3 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*98.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.3 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/23/22	
Surrogate: n-Nonane		*90.5 %*	*50-200*	*09/23/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**53.2**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.4 1'

E209119-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*97.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.6 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*97.1 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.6 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*90.4 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**1110**	200	10	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.4 2'

E209119-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*86.8 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**97.8**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.5 1'

E209119-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/26/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/26/22	
Toluene	ND	0.0250	1	09/21/22	09/26/22	
o-Xylene	ND	0.0250	1	09/21/22	09/26/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/26/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.6 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.5 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/26/22	
Surrogate: Bromofluorobenzene		*96.6 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.5 %*	*70-130*	*09/21/22*	*09/26/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/26/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*84.6 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2290**	200	10	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.5 2'

E209119-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.5 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.0 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*103 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.5 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.0 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*103 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*87.3 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**37.8**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.6 1'

E209119-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*91.5 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2310**	200	10	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.6 2'

E209119-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.2 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.2 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*92.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	**30.4**	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*85.3 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**92.2**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.7 1'

E209119-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.2 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*95.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.2 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*95.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*93.4 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2300**	100	5	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.7 2'

E209119-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.6 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.6 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*78.4 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**89.7**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.8 1'

E209119-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*95.8 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.6 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*95.8 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.6 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*98.4 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**2730**	200	10	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

S.8 2'

E209119-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*96.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*106 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*96.0 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	**88.3**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

SW1

E209119-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*107 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*97.3 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	ND	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

SW2

E209119-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.8 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*98.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*94.8 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*98.0 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	ND	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

SW3

E209119-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*95.9 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.1 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*95.9 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*105 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*95.8 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	ND	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

SW4

E209119-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Benzene	ND	0.0250	1	09/21/22	09/27/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/27/22	
Toluene	ND	0.0250	1	09/21/22	09/27/22	
o-Xylene	ND	0.0250	1	09/21/22	09/27/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/27/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239070
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/27/22	
Surrogate: Bromofluorobenzene		*96.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*09/21/22*	*09/27/22*	
Surrogate: Toluene-d8		*104 %*	*70-130*	*09/21/22*	*09/27/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239095
Diesel Range Organics (C10-C28)	ND	25.0	1	09/23/22	09/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/23/22	09/24/22	
Surrogate: n-Nonane		*100 %*	*50-200*	*09/23/22*	*09/24/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239104
Chloride	ND	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

BG1

E209119-21

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: IY			Batch: 2239067
Benzene	ND	0.0250	1	09/21/22	09/22/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/22/22	
Toluene	ND	0.0250	1	09/21/22	09/22/22	
o-Xylene	ND	0.0250	1	09/21/22	09/22/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/22/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/22/22	
Surrogate: 4-Bromochlorobenzene-PID		*97.2 %*	*70-130*	*09/21/22*	*09/22/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239067
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/22/22	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*85.2 %*	*70-130*	*09/21/22*	*09/22/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239076
Diesel Range Organics (C10-C28)	ND	25.0	1	09/21/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/21/22	09/23/22	
Surrogate: n-Nonane		*97.5 %*	*50-200*	*09/21/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239105
Chloride	**68.6**	20.0	1	09/23/22	09/24/22	

Sample Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

BG2

E209119-22

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: IY			Batch: 2239067
Benzene	ND	0.0250	1	09/21/22	09/22/22	
Ethylbenzene	ND	0.0250	1	09/21/22	09/22/22	
Toluene	ND	0.0250	1	09/21/22	09/22/22	
o-Xylene	ND	0.0250	1	09/21/22	09/22/22	
p,m-Xylene	ND	0.0500	1	09/21/22	09/22/22	
Total Xylenes	ND	0.0250	1	09/21/22	09/22/22	
Surrogate: 4-Bromochlorobenzene-PID		*98.5 %*	*70-130*	*09/21/22*	*09/22/22*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY			Batch: 2239067
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/21/22	09/22/22	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*84.3 %*	*70-130*	*09/21/22*	*09/22/22*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL			Batch: 2239076
Diesel Range Organics (C10-C28)	ND	25.0	1	09/21/22	09/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	09/21/22	09/23/22	
Surrogate: n-Nonane		*97.5 %*	*50-200*	*09/21/22*	*09/23/22*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2239105
Chloride	**61.3**	20.0	1	09/23/22	09/24/22	

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239070-BLK1)									Prepared: 09/21/22 Analyzed: 09/26/22
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	*0.483*		*0.500*		*96.5*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.477*		*0.500*		*95.4*	*70-130*			
Surrogate: Toluene-d8	*0.522*		*0.500*		*104*	*70-130*			
LCS (2239070-BS1)									Prepared: 09/21/22 Analyzed: 09/26/22
Benzene	2.01	0.0250	2.50		80.6	70-130			
Ethylbenzene	2.09	0.0250	2.50		83.5	70-130			
Toluene	2.04	0.0250	2.50		81.7	70-130			
o-Xylene	1.96	0.0250	2.50		78.6	70-130			
p,m-Xylene	3.89	0.0500	5.00		77.7	70-130			
Total Xylenes	5.85	0.0250	7.50		78.0	70-130			
Surrogate: Bromofluorobenzene	*0.515*		*0.500*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.474*		*0.500*		*94.8*	*70-130*			
Surrogate: Toluene-d8	*0.534*		*0.500*		*107*	*70-130*			
LCS Dup (2239070-BSD1)									Prepared: 09/21/22 Analyzed: 09/26/22
Benzene	2.22	0.0250	2.50		88.9	70-130	9.77	23	
Ethylbenzene	2.29	0.0250	2.50		91.7	70-130	9.36	27	
Toluene	2.24	0.0250	2.50		89.5	70-130	9.21	24	
o-Xylene	2.15	0.0250	2.50		85.9	70-130	8.90	27	
p,m-Xylene	4.26	0.0500	5.00		85.2	70-130	9.18	27	
Total Xylenes	6.41	0.0250	7.50		85.4	70-130	9.09	27	
Surrogate: Bromofluorobenzene	*0.501*		*0.500*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.485*		*0.500*		*96.9*	*70-130*			
Surrogate: Toluene-d8	*0.539*		*0.500*		*108*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239067-BLK1)									Prepared: 09/21/22 Analyzed: 09/21/22
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	*7.85*		*8.00*		*98.1*	*70-130*			
LCS (2239067-BS1)									Prepared: 09/21/22 Analyzed: 09/21/22
Benzene	5.62	0.0250	5.00		112	70-130			
Ethylbenzene	4.60	0.0250	5.00		91.9	70-130			
Toluene	4.89	0.0250	5.00		97.8	70-130			
o-Xylene	4.66	0.0250	5.00		93.3	70-130			
p,m-Xylene	9.33	0.0500	10.0		93.3	70-130			
Total Xylenes	14.0	0.0250	15.0		93.3	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.82*		*8.00*		*97.8*	*70-130*			
LCS Dup (2239067-BSD1)									Prepared: 09/21/22 Analyzed: 09/21/22
Benzene	5.09	0.0250	5.00		102	70-130	10.0	20	
Ethylbenzene	4.17	0.0250	5.00		83.4	70-130	9.73	20	
Toluene	4.44	0.0250	5.00		88.7	70-130	9.73	20	
o-Xylene	4.22	0.0250	5.00		84.4	70-130	10.0	20	
p,m-Xylene	8.48	0.0500	10.0		84.8	70-130	9.58	20	
Total Xylenes	12.7	0.0250	15.0		84.6	70-130	9.74	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.85*		*8.00*		*98.1*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239067-BLK1)									Prepared: 09/21/22 Analyzed: 09/21/22
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.75*		*8.00*		*84.3*	*70-130*			
LCS (2239067-BS2)									Prepared: 09/21/22 Analyzed: 09/21/22
Gasoline Range Organics (C6-C10)	44.7	20.0	50.0		89.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.96*		*8.00*		*87.0*	*70-130*			
LCS Dup (2239067-BSD2)									Prepared: 09/21/22 Analyzed: 09/21/22
Gasoline Range Organics (C6-C10)	47.2	20.0	50.0		94.5	70-130	5.62	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.93*		*8.00*		*86.7*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239070-BLK1)									Prepared: 09/21/22 Analyzed: 09/26/22
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	*0.483*		*0.500*		*96.5*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.477*		*0.500*		*95.4*	*70-130*			
Surrogate: Toluene-d8	*0.522*		*0.500*		*104*	*70-130*			
LCS (2239070-BS2)									Prepared: 09/21/22 Analyzed: 09/26/22
Gasoline Range Organics (C6-C10)	53.7	20.0	50.0		107	70-130			
Surrogate: Bromofluorobenzene	*0.503*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.455*		*0.500*		*90.9*	*70-130*			
Surrogate: Toluene-d8	*0.538*		*0.500*		*108*	*70-130*			
LCS Dup (2239070-BSD2)									Prepared: 09/21/22 Analyzed: 09/26/22
Gasoline Range Organics (C6-C10)	53.8	20.0	50.0		108	70-130	0.123	20	
Surrogate: Bromofluorobenzene	*0.479*		*0.500*		*95.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.466*		*0.500*		*93.1*	*70-130*			
Surrogate: Toluene-d8	*0.531*		*0.500*		*106*	*70-130*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239076-BLK1)									Prepared: 09/21/22 Analyzed: 09/22/22
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*41.6*		*50.0*		*83.1*	*50-200*			
LCS (2239076-BS1)									Prepared: 09/21/22 Analyzed: 09/22/22
Diesel Range Organics (C10-C28)	261	25.0	250		104	38-132			
Surrogate: n-Nonane	*43.3*		*50.0*		*86.6*	*50-200*			
Matrix Spike (2239076-MS1)				**Source: E209079-03**					Prepared: 09/21/22 Analyzed: 09/22/22
Diesel Range Organics (C10-C28)	266	25.0	250	ND	106	38-132			
Surrogate: n-Nonane	*44.9*		*50.0*		*89.7*	*50-200*			
Matrix Spike Dup (2239076-MSD1)				**Source: E209079-03**					Prepared: 09/21/22 Analyzed: 09/22/22
Diesel Range Organics (C10-C28)	264	25.0	250	ND	106	38-132	0.787	20	
Surrogate: n-Nonane	*43.8*		*50.0*		*87.5*	*50-200*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239095-BLK1)									Prepared: 09/23/22 Analyzed: 09/23/22
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*48.0*		*50.0*		*96.0*	*50-200*			
LCS (2239095-BS1)									Prepared: 09/23/22 Analyzed: 09/23/22
Diesel Range Organics (C10-C28)	249	25.0	250		99.6	38-132			
Surrogate: n-Nonane	*49.5*		*50.0*		*99.0*	*50-200*			
Matrix Spike (2239095-MS1)				**Source: E209119-14**					Prepared: 09/23/22 Analyzed: 09/23/22
Diesel Range Organics (C10-C28)	282	25.0	250	ND	113	38-132			
Surrogate: n-Nonane	*49.2*		*50.0*		*98.4*	*50-200*			
Matrix Spike Dup (2239095-MSD1)				**Source: E209119-14**					Prepared: 09/23/22 Analyzed: 09/23/22
Diesel Range Organics (C10-C28)	260	25.0	250	ND	104	38-132	8.02	20	
Surrogate: n-Nonane	*45.7*		*50.0*		*91.4*	*50-200*			

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239104-BLK1)									Prepared: 09/23/22 Analyzed: 09/23/22
Chloride	ND	20.0							
LCS (2239104-BS1)									Prepared: 09/23/22 Analyzed: 09/23/22
Chloride	247	20.0	250		98.9	90-110			
Matrix Spike (2239104-MS1)				**Source: E209119-01**					Prepared: 09/23/22 Analyzed: 09/23/22
Chloride	2880	200	250	2490	159	80-120			M2
Matrix Spike Dup (2239104-MSD1)				**Source: E209119-01**					Prepared: 09/23/22 Analyzed: 09/23/22
Chloride	2990	200	250	2490	200	80-120	3.51	20	M2

QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	**Reported:**
PO Box 247	Project Number:	22093-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	9/27/2022 4:18:28PM

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2239105-BLK1)									Prepared: 09/23/22 Analyzed: 09/24/22
Chloride	ND	20.0							
LCS (2239105-BS1)									Prepared: 09/23/22 Analyzed: 09/24/22
Chloride	251	20.0	250		100	90-110			
Matrix Spike (2239105-MS1)				**Source: E209118-01**					Prepared: 09/23/22 Analyzed: 09/24/22
Chloride	271	20.0	250	25.1	98.6	80-120			
Matrix Spike Dup (2239105-MSD1)				**Source: E209118-01**					Prepared: 09/23/22 Analyzed: 09/24/22
Chloride	272	20.0	250	25.1	98.8	80-120	0.179	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Pima Environmental Services-Carlsbad	Project Name:	Ruth 20 #2	
PO Box 247	Project Number:	22093-0001	**Reported:**
Plains TX, 79355-0247	Project Manager:	Tom Bynum	09/27/22 16:18

M2	Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Project Information | **Chain of Custody** | Page 1 of 3

Client: Pima Environmental Services	Bill To
Project: Ruth 2D #2	Attention: Armstrong Energy
Project Manager: Tom Bynum	Address:
Address: 5614 N. Lovington Hwy.	City, State, Zip
City, State, Zip Hobbs, NM. 88240	Phone:
Phone: 580-748-1613	Email:
Email: tom@pimaoil.com	Pima Project # 19-4
Report due by:	

Lab Use Only

Lab WO# E209119 | Job Number 22093-0001

TAT				EPA Program	
1D	2D	3D	Standard	CWA	SDWA
			X		
					RCRA

State: NM X | CO | UT | AZ | TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
8:00	9/15/22	S	1	S.1 1'	1							X		
8:05	"	"	"	S.1 2'	2							"		
8:10	"	"	"	S.2 1'	3							"		
8:15	"	"	"	S.2 2'	4							"		
8:20	"	"	"	S.3 1'	5							"		
8:25	"	"	"	S.3 2'	6							"		
8:30	"	"	"	S.4 1'	7							"		
8:35	"	"	"	S.4 2'	8							"		
8:40	"	"	"	S.5 1'	9							"		
8:45	"	"	↓	S.5 2'	10							"		

Additional Instructions: if not Bill to Pima

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Adriana Benavides

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Adriana Benavides	9/16/22	2:30		9-20-22	3:04
	9-20-22	3:45		9/21/22	10:45

Lab Use Only
Received on ice: (Y) N
T1 ____ T2 ____ T3 ____
AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other ____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

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Project Information | Chain of Custody | Page 2 of 3

Client: Pima Environmental Services	Bill To
Project: Ruth 2D#2	Attention: Armstrong Energy
Project Manager: Tom Bynum	Address:
Address: 5614 N. Lovington Hwy.	City, State, Zip
City, State, Zip Hobbs, NM. 88240	Phone:
Phone: 580-748-1613	Email:
Email: tom@pimaoil.com	Pima Project # 19-4
Report due by:	

Lab Use Only: Lab WO# E209119 | Job Number 22093-0001

TAT: 1D | 2D | 3D | Standard (X)

EPA Program: CWA | SDWA | RCRA

State: NM (X) | CO | UT | AZ | TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
8:50	9/15/22	S	1	S.6 1'	11							X		
8:55	"	"	"	S.6 2'	12							"		
9:00	"	"	"	S.7 1'	13							"		
9:05	"	"	"	S.7 2'	14							"		
9:10	"	"	"	S.8 1'	15							"		
9:15	"	"	"	S.8 2'	16							"		
9:20	"	"	"	SW 1	17							"		
9:25	"	"	"	SW 2	18							"		
9:30	"	"	"	SW 3	19							"		
9:35	"	"	"	SW 4	20							"		

Additional Instructions: if NOT Bill to Pima

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Adriana Benavides

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Alejandra Benavides	9/16/22	2:30		9-20-22	3:10
	9-20-22	4:15		9/21/22	10:45

Lab Use Only: Received on ice: (Y) N | T1 | T2 | T3 | AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

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Project Information | Chain of Custody | Page 3 of 3

Client: Pima Environmental Services	
Project: Ruth 2D#2	
Project Manager: Tom Bynum	
Address: 5614 N. Lovington Hwy.	
City, State, Zip Hobbs, NM, 88240	
Phone: 580-748-1613	
Email: tom@pimaoil.com	
Report due by:	

Bill To

Attention: Armstrong Energy	
Address:	
City, State, Zip	
Phone:	
Email:	
Pima Project #	19-4

Lab Use Only

Lab WO#	Job Number
E209119	27093.0001

TAT

1D	2D	3D	Standard
			X

EPA Program

CWA	SDWA	RCRA

State

NM	CO	UT	AZ	TX	
X					

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0			BGDOC NM	BGDOC TX			Remarks
9:40	9/15/22	S	1	BG1	21									X				
9:45	1	1	1	BG2	22									1				

Additional Instructions: if NOT Bill to Pima

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Adriana Benavides

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Adriana Benavides	9/16/22	2:30		9/20/22	3:10
	9/20/22	4:15		9/21/22	10:45

Lab Use Only

Received on ice: (Y) N

T1 T2 T3

AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

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Envirotech Analytical Laboratory

Printed: 9/21/2022 1:55:22PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Pima Environmental Services-Carlsbad	Date Received:	09/21/22 10:45	Work Order ID:	E209119
Phone:	(575) 631-6977	Date Logged In:	09/21/22 08:58	Logged In By:	Caitlin Christian
Email:	tom@pimaoil.com	Due Date:	09/27/22 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: UPS
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes

Sample Cooler

7. Was a sample cooler received?	Yes
8. If yes, was cooler received in good condition?	Yes
9. Was the sample(s) received intact, i.e., not broken?	Yes
10. Were custody/security seals present?	No
11. If yes, were custody/security seals intact?	NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes
13. If no visible ice, record the temperature. Actual sample temperature: 4°C	

Sample Container

14. Are aqueous VOC samples present?	No
15. Are VOC samples collected in VOA Vials?	NA
16. Is the head space less than 6-8 mm (pea sized or less)?	NA
17. Was a trip blank (TB) included for VOC analyses?	NA
18. Are non-VOC samples collected in the correct containers?	Yes
19. Is the appropriate volume/weight or number of sample containers collected?	Yes

Field Label

20. Were field sample labels filled out with the minimum information:	
Sample ID?	Yes
Date/Time Collected?	Yes
Collectors name?	No

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No
22. Are sample(s) correctly preserved?	NA
24. Is lab filteration required and/or requested for dissolved metals?	No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: na

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

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 163443

CONDITIONS

Operator: ARMSTRONG ENERGY CORP P.O. Box 1973 Roswell, NM 88202	OGRID: 1092
	Action Number: 163443
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Approved.	1/5/2023