



Pima Environmental Services, LLC
1601 N. Turner Ste 500
Hobbs, NM 88240
575-964-7740

October 26, 2020

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

**Re: Site Assessment, Remediation Actions and Closure Report
Emerald PWU 20 #4H
API No. 30-015-40037
GPS: Latitude 32.6415024 Longitude -104.1045303
UL "M", Sec. 20, T19S, R29E
Eddy County, NM
NMOCD Ref. No. 2RP-5304**

Dear Mr. Bratcher,

Pima Environmental Services, LLC (Pima) has been contracted by Devon Energy Production Company (Devon) to perform a spill assessment, site remediation and has prepared this Closure Report for a produced water and oil release that occurred at the Emerald PWU 20 #4H (Emerald). The initial C-141 was submitted on March 12, 2019 (Appendix C). This incident was assigned 2RP-5304, Incident ID NAB1907942557, by the New Mexico Oil Conservation Division (NMOCD).

Site Characterization

The Emerald is located approximately seventeen (17) miles northeast of Carlsbad, NM. This spill site is in Unit M, Section 20, Township 19S, Range 29E, Latitude 32.6415024, Longitude -104.1045303, Eddy County, NM. Figure 1 references a location map.

Per the New Mexico Bureau of Geology and Mineral Resources, the geology is in the Quaternary Formation- Eolian and piedmont deposits (Holocene to middle Pleistocene)-interlayered eolian sands and piedmont-slope deposits (QEP). The soil in this area is made up of Tonuco loamy fine sands, 0 to 3 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 excessively drained. There is a high potential for karst geology to be present in the area of the Emerald (Figure 3).

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 75 feet below grade surface (BGS). According to the United States Geological Survey (USGS), the nearest groundwater is 67 feet BGS. The closest waterway and is a Playa located approximately 6.79 miles to the southeast of this location. See Appendix A for the referenced Surface Water Map.

Table 1 NMAC and Closure Criteria 19.15.29					
Depth to Groundwater (Appendix B)	Constituent & Limits				
	Chlorides	Total TPH	GRO+DRO	BTEX	Benzene
High Karst <50'	600 mg/kg	100 mg/kg	100 mg/kg	50 mg/kg	10 mg/kg
If the release occurred within any of the following areas, the responsible party would treat the release as if the groundwater was less than 50 feet per Rule 19.15.29					
Water Issues				Yes	No
Within 300 feet of any continuously flowing watercourse or any other significant watercourse					x
Within 200 feet of any lakebed, sinkhole, or playa lake (measures from the ordinary high-water mark)					x
Within 300 feet from an occupied permanent residence, school, hospital, institution, or church					x
Within 500 feet of a spring or a private, domestic freshwater well used by less than five households for domestic or stock water purposes					x
Within 1000 feet of any freshwater well or spring					x
Within incorporated municipal boundaries or within a defined municipal freshwater well field					x
Within 300 feet of a wetlands					x
Within the area overlying a subsurface mine					x
Within an unstable area (Karst)				x	
Within a 100-year floodplain					x

Reference Figure 2 for a TOPO Map.

Release Information

2RP-5304: On March 2, 2019, a leak was found due to a packing leak from the stuffing box on the polish rod. An estimated 3 bbls of oil and 1.4 bbls of produced water was released onto the ground. Zero fluids were recovered.

Site Assessment and Soil Sampling Results

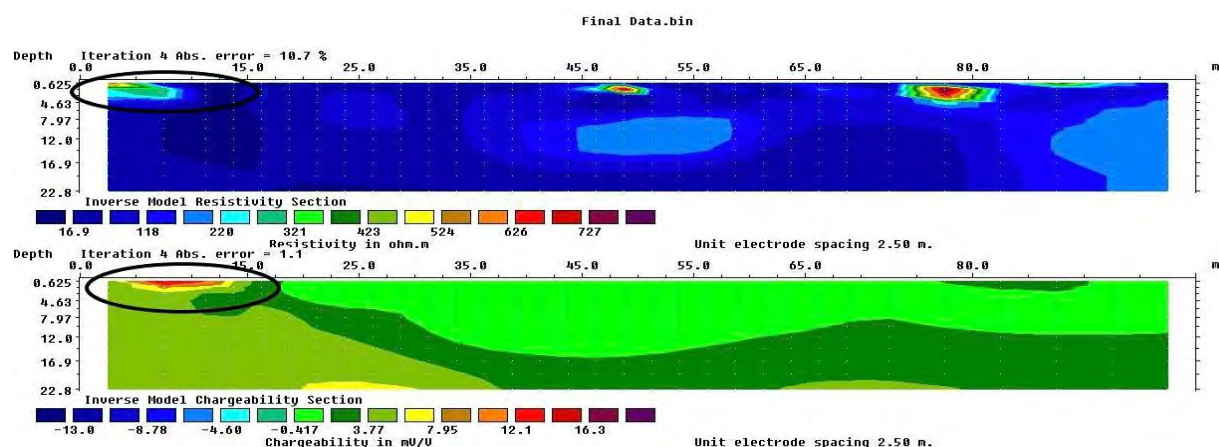
On July 29, 2020, Pima Environmental conducted a site assessment and obtained soil samples. The laboratory results of this sampling event can be found in the following data table. Based on our initial soil sample results, we weren't able to delineate sample point S-2 and S-5. We returned to the site to key in on these two areas and used the Resistivity Method and ran a resistivity test. The 2-D image result from the event shows resistivity changes in the soil at 2.5 meters (8-feet) BGS. This image is attached below the data table below.

7-28-20 Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is 51'-100') HIGH KARST								
Sample Date 7-28-20		NM Approved Laboratory Results						
Sample ID	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	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	75
	2	ND	ND	ND	ND	ND	ND	160
S-2	0-6	ND	ND	ND	60	79	139	490
	1	ND	ND	ND	ND	ND	ND	2700
	2	ND	ND	ND	ND	ND	ND	1400
S-3	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-4	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-5	0-6	ND	ND	ND	ND	ND	ND	6700
	1	ND	ND	ND	ND	ND	ND	2500
	2	ND	ND	ND	ND	ND	ND	1800
S-6	0-6	ND	ND	ND	ND	ND	ND	100
	1	ND	ND	ND	ND	ND	ND	170
	2	ND	ND	ND	ND	ND	ND	220
S-7	0-6	ND	ND	ND	ND	ND	ND	100
	1	ND	ND	ND	ND	ND	ND	83
	2	ND	ND	ND	ND	ND	ND	ND
S-8	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-9	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-10	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-11	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-12	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND
S-13	0-6	ND	ND	ND	ND	ND	ND	130
	1	ND	ND	ND	ND	ND	ND	95
	2	ND	ND	ND	ND	ND	ND	ND
S-14	0-6	ND	ND	ND	ND	ND	ND	ND
	1	ND	ND	ND	ND	ND	ND	ND
	2	ND	ND	ND	ND	ND	ND	ND

ND- Analyte Not Detected

Resistivity Test 2D Image

**Remediation Activities**

On September 21, 2020, Pima mobilized personnel and equipment to conduct remedial activities. The area in the vicinity from S-2 to S-5 was excavated to a depth of 4.0-feet below grade surface (BGS) and extended 20-feet by 90-feet. Test trenches in sample areas S-2 (labeled S-7 East) and S-5 (labeled S-8 W. Test) was dug to 8.0-feet BGS to obtain samples for delineation and to confirm the Resistivity Test results. Sidewall and bottom confirmation samples were also obtained, and the laboratory results can be found in the following data table.

9-22-20 Confirmation Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (High Karst Area)						
Sample Date 9-22-20						
Sample ID	Depth (BGS)	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
S-1 N. Sidewall Composite	4	ND	18	19.6	37.6	32
S-2 N. Sidewall Composite	4	ND	ND	ND	ND	48
S-3 E. Sidewall Comp.	4	ND	ND	ND	ND	80
S-4 S. Sidewall Comp.	4	ND	ND	ND	ND	16
S-5 S. Sidewall Comp.	4	ND	ND	ND	ND	144
S-6 W. Sidewall Comp.	4	ND	ND	ND	ND	64
S-7 E. Test	8	ND	ND	ND	ND	16
S-8 W. Test	8	ND	ND	ND	ND	208

ND- Analyte Not Detected

Complete Laboratory results can be found attached in Appendix D.

The final sample results were below NMOCD Closure Criteria 19.15.29 NMAC. Based on these findings, no further remediation activities were needed at this location. The excavation was backfilled with clean, like material, the area was then contoured to match the tank battery, and the berm was built back up.

Closure Request

After careful review, Pima requests that this incident, NAB1907942557, be closed. Devon has complied with the applicable closure requirements outlined in rule 19.15.19.12 NMAC.

Should you have any questions or need additional information, please feel free to contact Chris Jones at 575-964-7740 or chris@pimaoil.com.

Respectfully,



Chris Jones
Environmental Professional
Pima Environmental Services, LLC

Attachments

Figures:

- 1- Location Map
- 2- TOPO Map
- 3- Karst Map
- 4- Site Map

Appendices:

- Appendix A- Referenced Water Surveys
- Appendix B- Soil Survey and Geological Data
- Appendix C- C-141's
- Appendix D- Laboratory Reports
- Appendix E- Photographic Documentation



Pima Environmental Services

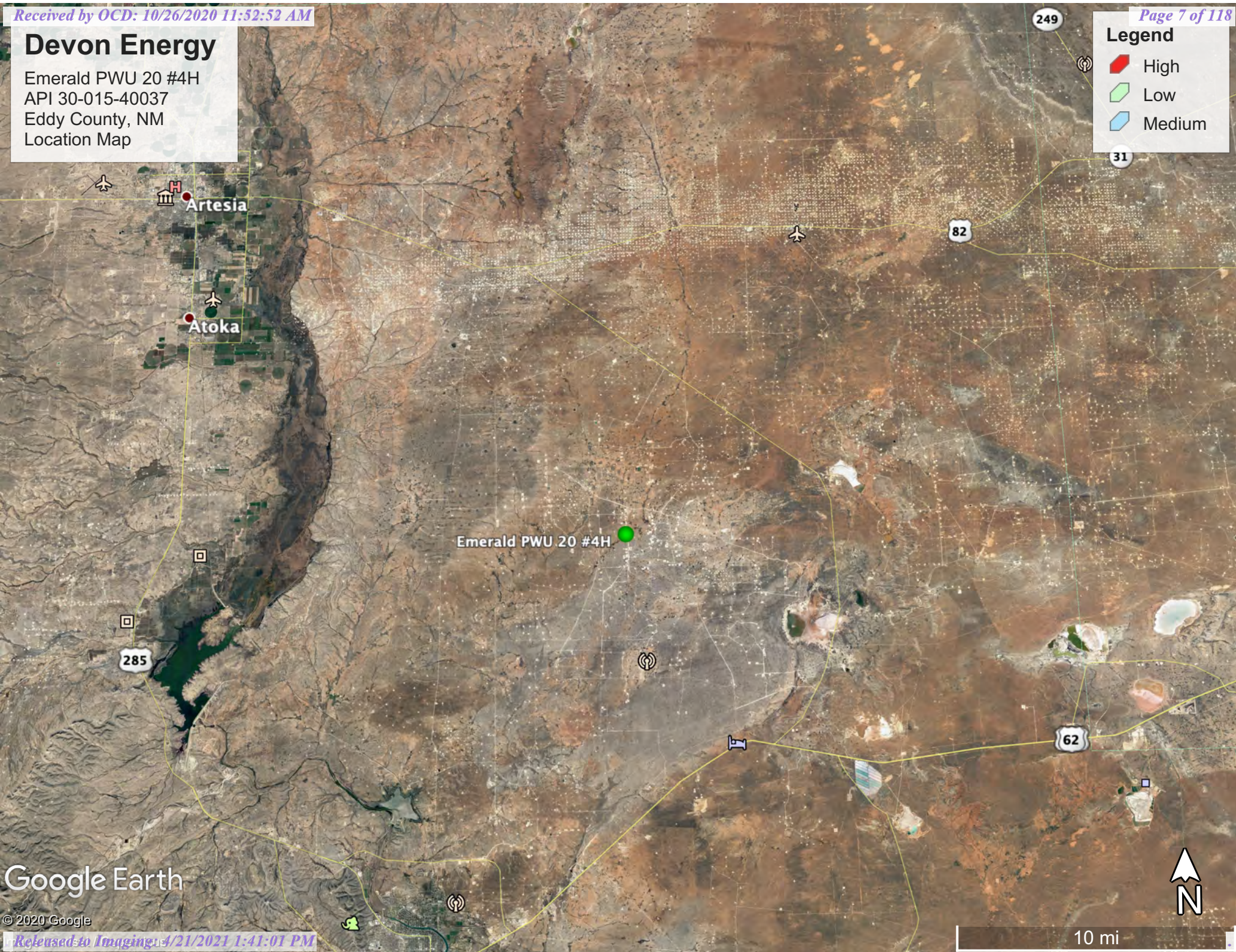
Figures:

- 1-Location Map
- 2- TOPO Map
- 3- Karst Map
- 4- Site Map

Devon Energy

Emerald PWU 20 #4H
API 30-015-40037
Eddy County, NM
Location Map

- Legend**
- High
 - Low
 - Medium

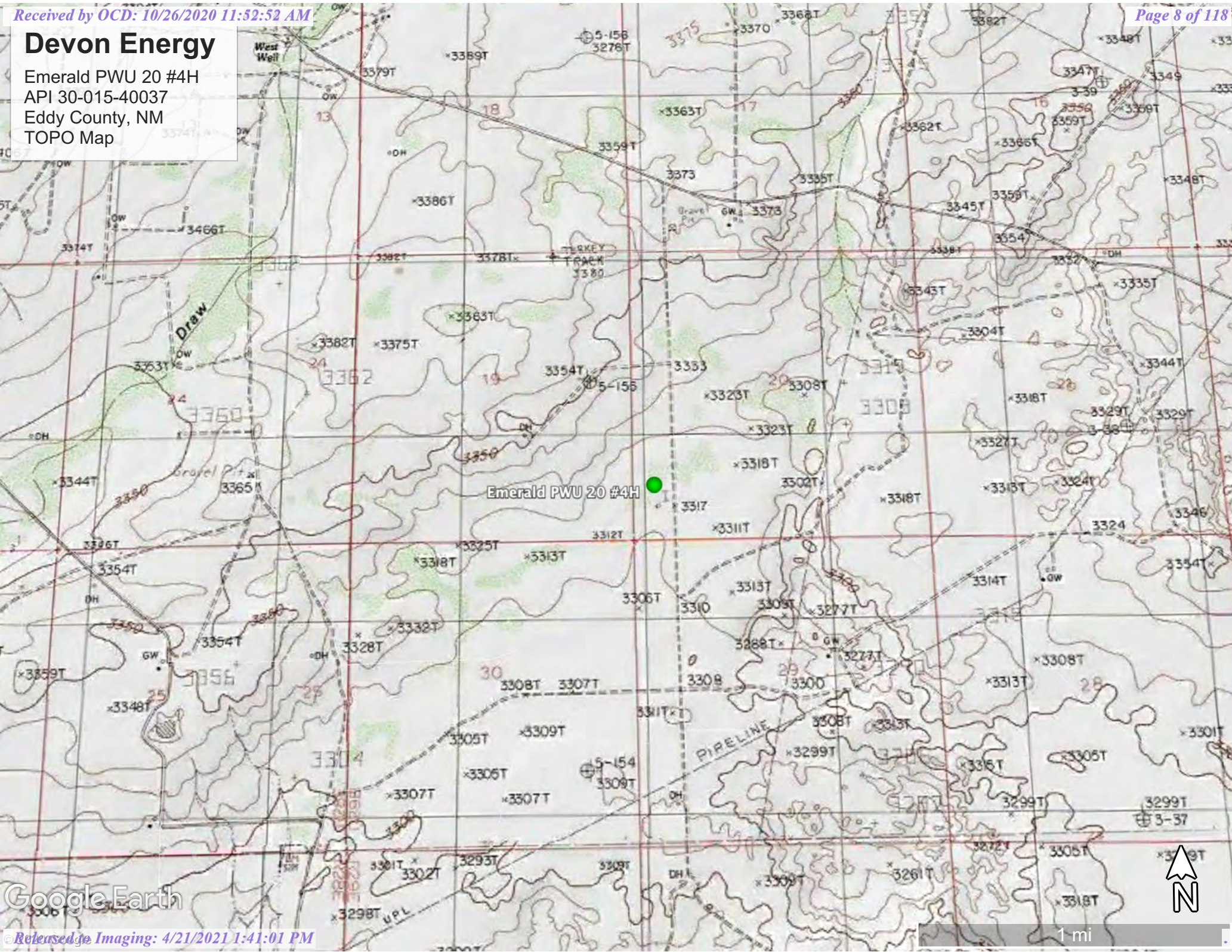


Google Earth

© 2020 Google

Devon Energy

Emerald PWU 20 #4H
API 30-015-40037
Eddy County, NM
TOPO Map



Google Earth

1 mi

Devon Energy

Emerald PWU 20 #4H
API 30-015-40037
Eddy County, NM
Karst Map

Legend

- High
- Low
- Medium

Emerald PWU 20 #4H

Bluestem Rd

360





Google Earth

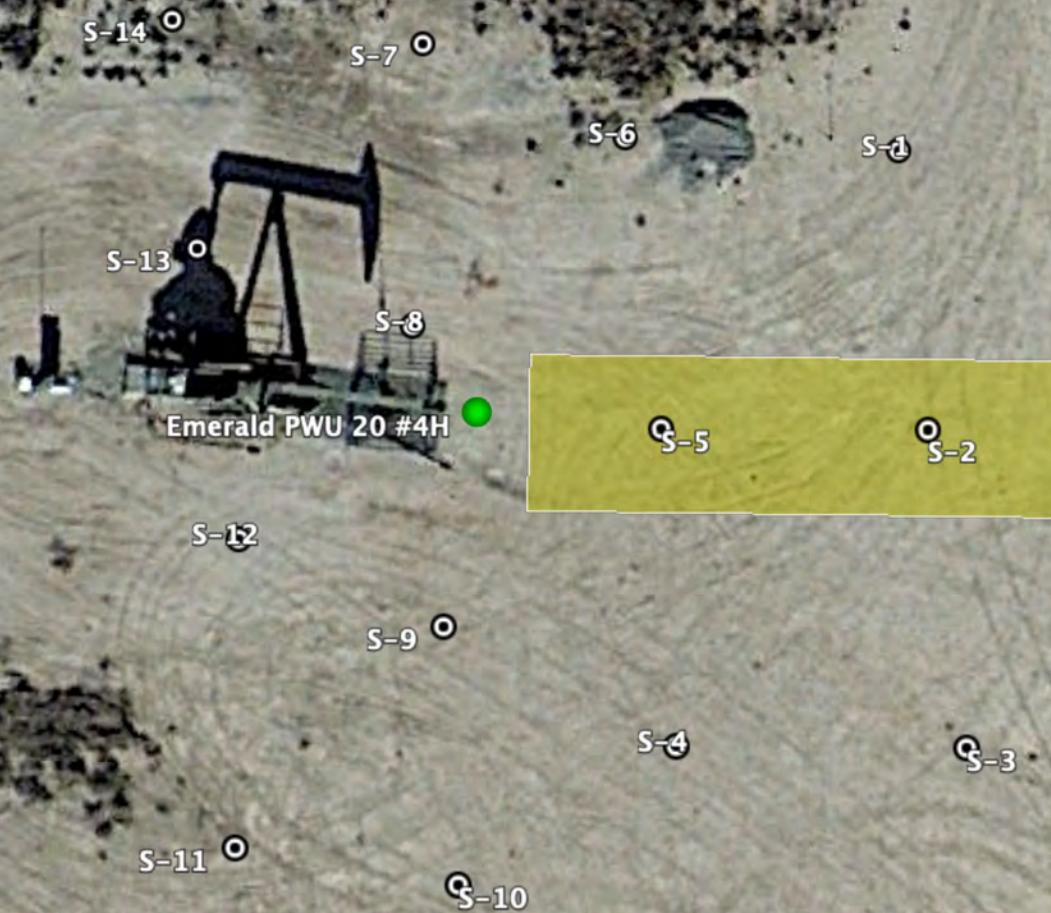
© 2020 Google

Devon Energy

Emerald PWU 20 #4H
API 30-015-40037
Eddy County, NM
Site Map

Legend

-  Excavated Area
-  Samples



Emerald PWU 20 #4H

S-5

S-2

S-12

S-9

S-4

S-3

S-11

S-10

S-14

S-7

S-6

S-1

S-13

S-8



100 ft



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	DepthWell	DepthWater	Water Column
CP01231 POD1		CP	ED	4	4	2	36	19S	28E	582311	3609372	3043	300	75	225
CP00646		CP	ED	1	1	4	07	19S	29E	583155	3615551	3743	199	150	49

Average Depth to Water:112 feet

Minimum Depth:75 feet

Maximum Depth:150 feet

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 583998

Northing (Y): 3611905

Radius: 4000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.


8/6/20 10:03 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 01231 POD1	4	4	2	36	19S	28E	582311	3609372 
Driller License: 1654		Driller Company:				NOT WORKING FOR HIRE--SIRMAN DRILLING AND CONSTRUC			
Driller Name:									
Drill Start Date:	10/21/2013	Drill Finish Date:				10/21/2013		Plug Date:	
Log File Date:	10/29/2013	PCW Rcv Date:						Source:	Shallow
Pump Type:		Pipe Discharge Size:						Estimated Yield:	80 GPM
Casing Size:	8.00	Depth Well:				300 feet		Depth Water:	75 feet
Water Bearing Stratifications:					Top	Bottom	Description		
					200	300	Limestone/Dolomite/Chalk		
Casing Perforations:					Top	Bottom			
					220	300			

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/6/20 10:03 AM POINT OF DIVERSION SUMMARY

National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
United States

GO

- Click to hide News Bulletins

Introducing The Next Generation of USGS Water Data for the Nation

Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 323645104074001

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 323645104074001 19S.28E.36.43233

Available data for this site

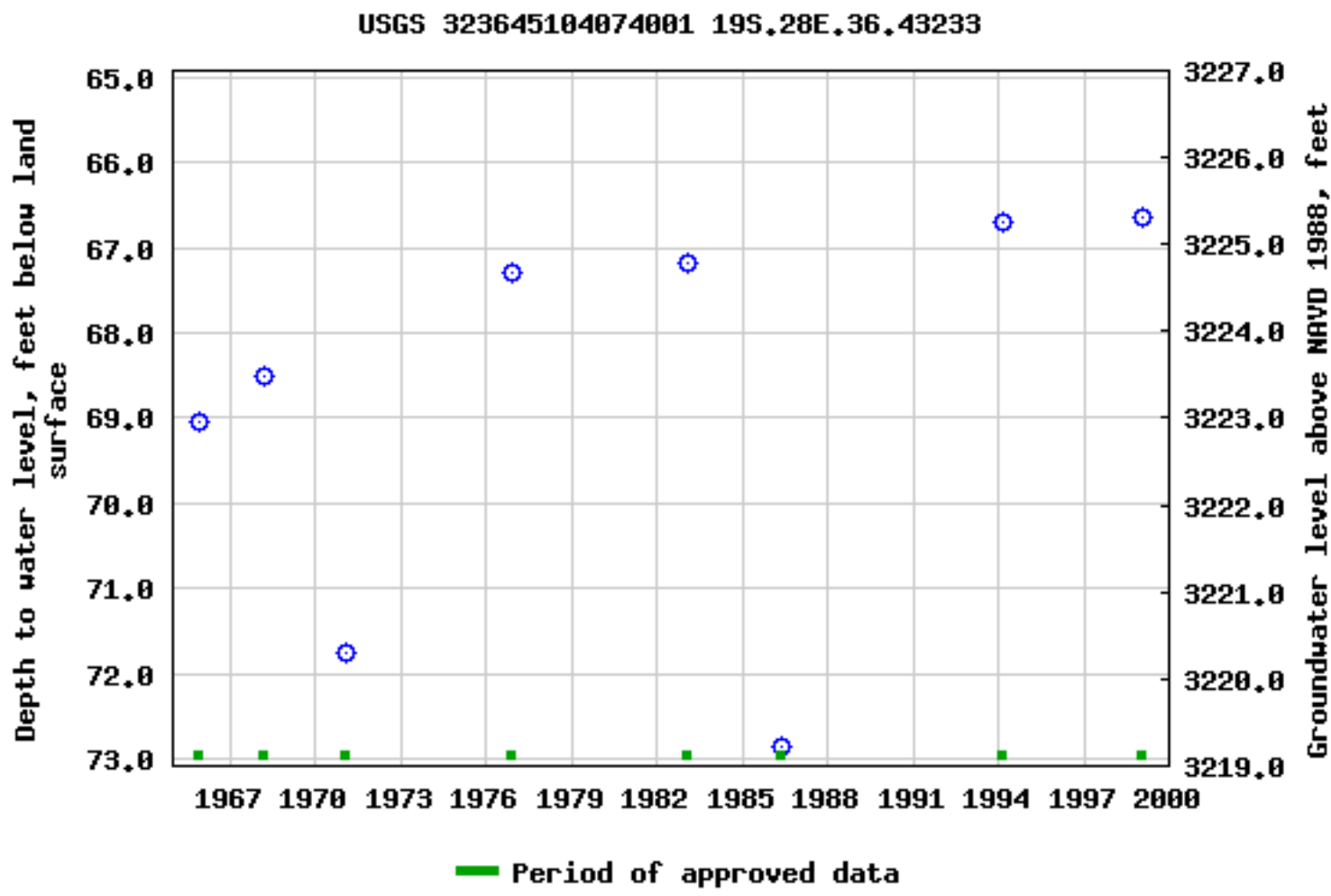
Groundwater: Field measurements

GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°36'45", Longitude 104°07'40" NAD27
Land-surface elevation 3,292 feet above NAVD88
The depth of the well is 87 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) 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](#)



National Water Information System: Mapper

Help Info

Sites

Map

Search

Surface-Water Sites

Groundwater Sites

Active Sites

Any data

Instantaneous data

Daily data

Water-quality data

Measurements

Annual Report

Inactive Sites

Any data

Instantaneous data

Daily data

Water-quality data

Measurements

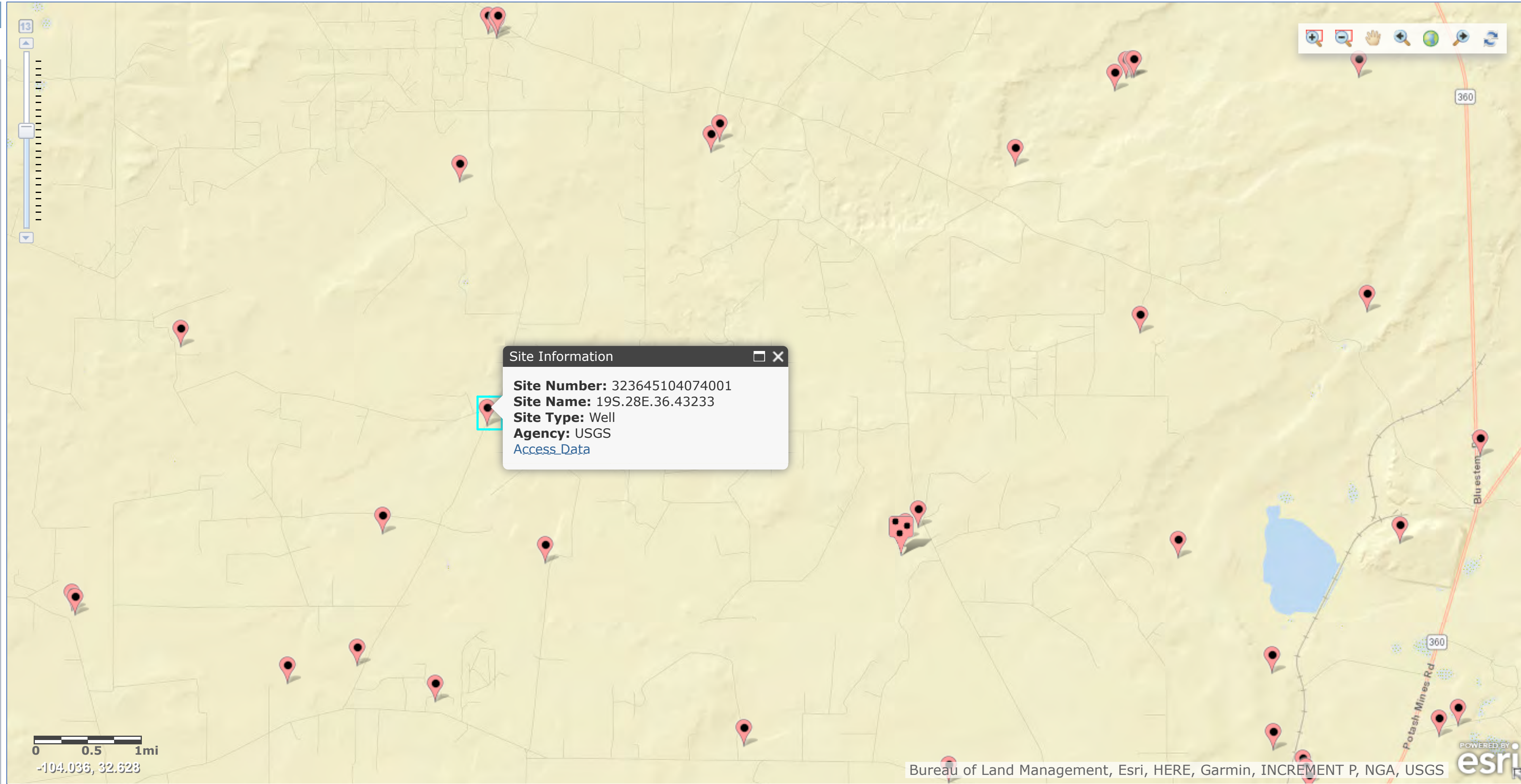
Annual Report

Springs

Atmospheric Sites

Other Sites



Released to Imaging: 4/21/2021 1:41:01 PM



Devon Energy

Emerald PWU 20 #4H
API 30-015-40037
Eddy County, NM
Surface Water Map

Legend

-  6.79 Miles
-  Surface Water

Emerald PWU 20 #4H

6.79 Miles

Bluestem Rd

Potash Mines Rd

Potash Mine Rd

4 mi



Google Earth



Pima Environmental Services

Appendix B
Soil Survey & Geological Data:
USDA

Map Unit Description: Tonuco loamy fine sand, 0 to 3 percent slopes, eroded---Eddy Area,
New Mexico

Eddy Area, New Mexico

TN—Tonuco loamy fine sand, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w62

Elevation: 3,000 to 4,100 feet

Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 200 to 217 days

Farmland classification: Not prime farmland

Map Unit Composition

Tonuco and similar soils: 98 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonuco

Setting

Landform: Alluvial fans, plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear, convex

Across-slope shape: Linear

Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 5 inches: loamy fine sand

H2 - 5 to 15 inches: loamy fine sand

H3 - 15 to 19 inches: indurated

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 6 to 20 inches to petrocalcic

Drainage class: Excessively drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: R042XC004NM - Sandy

Hydric soil rating: No

Map Unit Description: Tonuco loamy fine sand, 0 to 3 percent slopes, eroded---Eddy Area,
New Mexico

Minor Components

Tonuco

Percent of map unit: 1 percent

Ecological site: R042XC004NM - Sandy

Hydric soil rating: No

Dune land

Percent of map unit: 1 percent

Hydric soil rating: No

Data Source Information

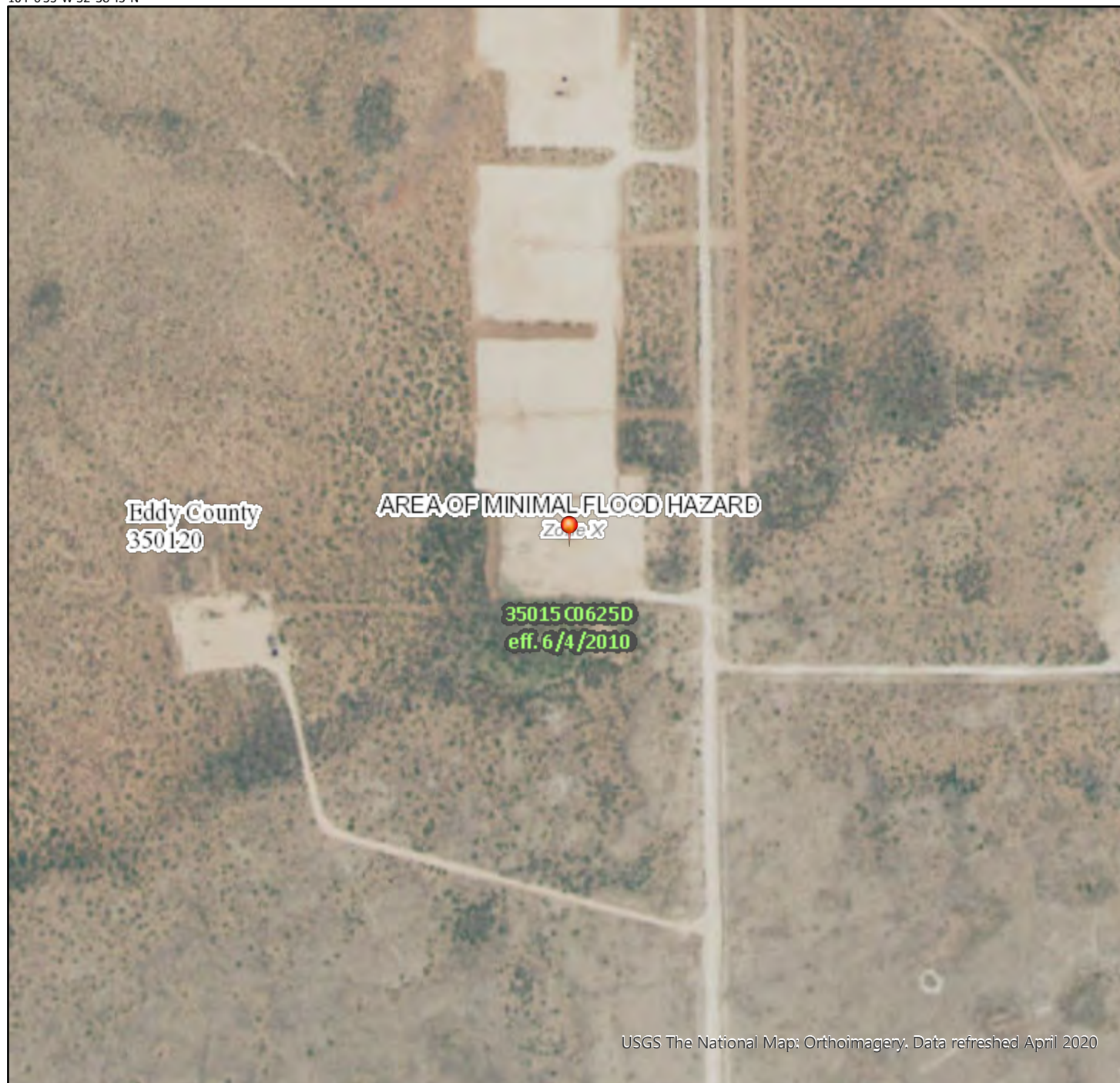
Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 16, Jun 8, 2020

National Flood Hazard Layer FIRMette



104°6'35"W 32°38'45"N



USGS The National Map: Orthoimagery. Data refreshed April 2020

Released to Imaging: 4/21/2021 1:41:01 PM

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

1:6,000

104°5'58"W 32°38'14"N

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 Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



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 8/6/2020 at 12:25 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's:

Initial

Final

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)

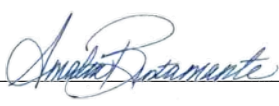
<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> 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: _____ Title: _____ Signature: <u>Kendra DeHoyos</u> Date: _____ email: _____ Telephone: _____
<u>OCD Only</u> Received by: <u></u> Date: _____

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?	____ 67 ____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

Page 2

Incident ID	NAB1907942557
District RP	2RP-5304
Facility ID	
Application ID	

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: Tom Bynum Title: EHS Consultant
Signature: *Tom Bynum* Date: 10/25/2020
email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: _____ Date: _____

Incident ID	NAB1907942557
District RP	2RP-5304
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: Tom Bynum Title: EHS Consultant
Signature: Tom Bynum Date: 10/25/2020
email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: Chad Hensley Date: 04/21/2021

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: ~~DENIED~~ ^{CH} Chad Hensley Date: 04/21/2021

Printed Name: Chad Hensley Title: Environmental Specialist Advanced



Pima Environmental Services

Appendix D:
Photographic Documentation

Excavation





Backfill and Completion





Pima Environmental Services

Appendix E:
Laboratory Results



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

August 06, 2020

Chris Jones

Pima Environmental Services LLC

1601 N. Turner Ste 500

Hobbs, NM 88240

TEL: (575) 631-6977

FAX:

RE: Emerald PWU 20 4H

OrderNo.: 2007E40

Dear Chris Jones:

Hall Environmental Analysis Laboratory received 56 sample(s) on 7/29/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S1, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:00:00 AM

Lab ID: 2007E40-001

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	8/3/2020 11:44:38 PM	54139
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 8:26:28 PM	54045
Surr: BFB	103	70-130		%Rec	1	7/31/2020 8:26:28 PM	54045
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/1/2020 3:22:50 AM	54055
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/1/2020 3:22:50 AM	54055
Surr: DNOP	39.4	30.4-154		%Rec	1	8/1/2020 3:22:50 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 8:26:28 PM	54045
Toluene	ND	0.049		mg/Kg	1	7/31/2020 8:26:28 PM	54045
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 8:26:28 PM	54045
Xylenes, Total	ND	0.099		mg/Kg	1	7/31/2020 8:26:28 PM	54045
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/31/2020 8:26:28 PM	54045
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	7/31/2020 8:26:28 PM	54045
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/31/2020 8:26:28 PM	54045
Surr: Toluene-d8	97.5	70-130		%Rec	1	7/31/2020 8:26:28 PM	54045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 1 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S1, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:05:00 AM

Lab ID: 2007E40-002

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	75	60		mg/Kg	20	8/3/2020 11:56:58 PM	54139
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 8:54:59 PM	54045
Surr: BFB	99.4	70-130		%Rec	1	7/31/2020 8:54:59 PM	54045
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/1/2020 4:35:30 AM	54055
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 4:35:30 AM	54055
Surr: DNOP	38.7	30.4-154		%Rec	1	8/1/2020 4:35:30 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 8:54:59 PM	54045
Toluene	ND	0.049		mg/Kg	1	7/31/2020 8:54:59 PM	54045
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 8:54:59 PM	54045
Xylenes, Total	ND	0.097		mg/Kg	1	7/31/2020 8:54:59 PM	54045
Surr: 1,2-Dichloroethane-d4	98.5	70-130		%Rec	1	7/31/2020 8:54:59 PM	54045
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	7/31/2020 8:54:59 PM	54045
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/31/2020 8:54:59 PM	54045
Surr: Toluene-d8	98.5	70-130		%Rec	1	7/31/2020 8:54:59 PM	54045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 2 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S1, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:10:00 AM

Lab ID: 2007E40-003

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	160	60		mg/Kg	20	8/4/2020 12:09:18 AM	54139
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/31/2020 9:23:28 PM	54045
Surr: BFB	101	70-130		%Rec	1	7/31/2020 9:23:28 PM	54045
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/1/2020 4:59:46 AM	54055
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 4:59:46 AM	54055
Surr: DNOP	37.4	30.4-154		%Rec	1	8/1/2020 4:59:46 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 9:23:28 PM	54045
Toluene	ND	0.047		mg/Kg	1	7/31/2020 9:23:28 PM	54045
Ethylbenzene	ND	0.047		mg/Kg	1	7/31/2020 9:23:28 PM	54045
Xylenes, Total	ND	0.094		mg/Kg	1	7/31/2020 9:23:28 PM	54045
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/31/2020 9:23:28 PM	54045
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/31/2020 9:23:28 PM	54045
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/31/2020 9:23:28 PM	54045
Surr: Toluene-d8	98.1	70-130		%Rec	1	7/31/2020 9:23:28 PM	54045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 3 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S1,3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:15:00 AM

Lab ID: 2007E40-004

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	230	60		mg/Kg	20	8/4/2020 9:16:43 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/31/2020 9:52:01 PM	54045
Surr: BFB	102	70-130		%Rec	1	7/31/2020 9:52:01 PM	54045
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 5:23:55 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 5:23:55 AM	54055
Surr: DNOP	33.9	30.4-154		%Rec	1	8/1/2020 5:23:55 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 9:52:01 PM	54045
Toluene	ND	0.050		mg/Kg	1	7/31/2020 9:52:01 PM	54045
Ethylbenzene	ND	0.050		mg/Kg	1	7/31/2020 9:52:01 PM	54045
Xylenes, Total	ND	0.099		mg/Kg	1	7/31/2020 9:52:01 PM	54045
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/31/2020 9:52:01 PM	54045
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	7/31/2020 9:52:01 PM	54045
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/31/2020 9:52:01 PM	54045
Surr: Toluene-d8	99.8	70-130		%Rec	1	7/31/2020 9:52:01 PM	54045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 4 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S2, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:20:00 AM

Lab ID: 2007E40-005

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	490	60		mg/Kg	20	8/4/2020 9:29:03 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/31/2020 4:16:41 AM	54053
Surr: BFB	107	70-130		%Rec	1	7/31/2020 4:16:41 AM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	60	9.1		mg/Kg	1	8/1/2020 5:48:10 AM	54055
Motor Oil Range Organics (MRO)	79	46		mg/Kg	1	8/1/2020 5:48:10 AM	54055
Surr: DNOP	44.7	30.4-154		%Rec	1	8/1/2020 5:48:10 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 4:16:41 AM	54053
Toluene	ND	0.048		mg/Kg	1	7/31/2020 4:16:41 AM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	7/31/2020 4:16:41 AM	54053
Xylenes, Total	ND	0.097		mg/Kg	1	7/31/2020 4:16:41 AM	54053
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	7/31/2020 4:16:41 AM	54053
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	7/31/2020 4:16:41 AM	54053
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/31/2020 4:16:41 AM	54053
Surr: Toluene-d8	104	70-130		%Rec	1	7/31/2020 4:16:41 AM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 5 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S2, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:25:00 AM

Lab ID: 2007E40-006

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2700	150		mg/Kg	50	8/5/2020 9:41:00 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/31/2020 5:46:13 AM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 5:46:13 AM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/1/2020 6:12:27 AM	54055
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 6:12:27 AM	54055
Surr: DNOP	44.5	30.4-154		%Rec	1	8/1/2020 6:12:27 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 5:46:13 AM	54053
Toluene	ND	0.050		mg/Kg	1	7/31/2020 5:46:13 AM	54053
Ethylbenzene	ND	0.050		mg/Kg	1	7/31/2020 5:46:13 AM	54053
Xylenes, Total	ND	0.10		mg/Kg	1	7/31/2020 5:46:13 AM	54053
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%Rec	1	7/31/2020 5:46:13 AM	54053
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	7/31/2020 5:46:13 AM	54053
Surr: Dibromofluoromethane	96.6	70-130		%Rec	1	7/31/2020 5:46:13 AM	54053
Surr: Toluene-d8	98.9	70-130		%Rec	1	7/31/2020 5:46:13 AM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 6 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S2, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:30:00 AM

Lab ID: 2007E40-007

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1400	60		mg/Kg	20	8/4/2020 9:53:44 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/31/2020 1:31:01 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 1:31:01 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2020 6:36:36 AM	54055
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 6:36:36 AM	54055
Surr: DNOP	43.5	30.4-154		%Rec	1	8/1/2020 6:36:36 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 1:31:01 PM	54053
Toluene	ND	0.047		mg/Kg	1	7/31/2020 1:31:01 PM	54053
Ethylbenzene	ND	0.047		mg/Kg	1	7/31/2020 1:31:01 PM	54053
Xylenes, Total	ND	0.094		mg/Kg	1	7/31/2020 1:31:01 PM	54053
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%Rec	1	7/31/2020 1:31:01 PM	54053
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	7/31/2020 1:31:01 PM	54053
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	7/31/2020 1:31:01 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 1:31:01 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 7 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S2, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:35:00 AM

Lab ID: 2007E40-008

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1300	60		mg/Kg	20	8/4/2020 10:06:05 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 2:00:59 PM	54053
Surr: BFB	107	70-130		%Rec	1	7/31/2020 2:00:59 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 7:00:45 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 7:00:45 AM	54055
Surr: DNOP	43.8	30.4-154		%Rec	1	8/1/2020 7:00:45 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 2:00:59 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 2:00:59 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 2:00:59 PM	54053
Xylenes, Total	ND	0.098		mg/Kg	1	7/31/2020 2:00:59 PM	54053
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%Rec	1	7/31/2020 2:00:59 PM	54053
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	7/31/2020 2:00:59 PM	54053
Surr: Dibromofluoromethane	96.1	70-130		%Rec	1	7/31/2020 2:00:59 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 2:00:59 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 8 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S3, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:40:00 AM

Lab ID: 2007E40-009

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 10:18:26 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/31/2020 2:31:08 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 2:31:08 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2020 7:24:54 AM	54055
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 7:24:54 AM	54055
Surr: DNOP	35.7	30.4-154		%Rec	1	8/1/2020 7:24:54 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	7/31/2020 2:31:08 PM	54053
Toluene	ND	0.046		mg/Kg	1	7/31/2020 2:31:08 PM	54053
Ethylbenzene	ND	0.046		mg/Kg	1	7/31/2020 2:31:08 PM	54053
Xylenes, Total	ND	0.093		mg/Kg	1	7/31/2020 2:31:08 PM	54053
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%Rec	1	7/31/2020 2:31:08 PM	54053
Surr: 4-Bromofluorobenzene	89.7	70-130		%Rec	1	7/31/2020 2:31:08 PM	54053
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/31/2020 2:31:08 PM	54053
Surr: Toluene-d8	103	70-130		%Rec	1	7/31/2020 2:31:08 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 9 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S3, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:45:00 AM

Lab ID: 2007E40-010

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 10:30:46 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/31/2020 3:01:11 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 3:01:11 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/1/2020 8:13:14 AM	54055
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 8:13:14 AM	54055
Surr: DNOP	34.9	30.4-154		%Rec	1	8/1/2020 8:13:14 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 3:01:11 PM	54053
Toluene	ND	0.048		mg/Kg	1	7/31/2020 3:01:11 PM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	7/31/2020 3:01:11 PM	54053
Xylenes, Total	ND	0.096		mg/Kg	1	7/31/2020 3:01:11 PM	54053
Surr: 1,2-Dichloroethane-d4	91.6	70-130		%Rec	1	7/31/2020 3:01:11 PM	54053
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	7/31/2020 3:01:11 PM	54053
Surr: Dibromofluoromethane	95.1	70-130		%Rec	1	7/31/2020 3:01:11 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 3:01:11 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 10 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S3, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:50:00 AM

Lab ID: 2007E40-011

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 11:32:32 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 3:31:15 PM	54053
Surr: BFB	103	70-130		%Rec	1	7/31/2020 3:31:15 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 8:37:25 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 8:37:25 AM	54055
Surr: DNOP	36.0	30.4-154		%Rec	1	8/1/2020 8:37:25 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 3:31:15 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 3:31:15 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 3:31:15 PM	54053
Xylenes, Total	ND	0.098		mg/Kg	1	7/31/2020 3:31:15 PM	54053
Surr: 1,2-Dichloroethane-d4	95.2	70-130		%Rec	1	7/31/2020 3:31:15 PM	54053
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	7/31/2020 3:31:15 PM	54053
Surr: Dibromofluoromethane	97.8	70-130		%Rec	1	7/31/2020 3:31:15 PM	54053
Surr: Toluene-d8	102	70-130		%Rec	1	7/31/2020 3:31:15 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S3, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 9:55:00 AM

Lab ID: 2007E40-012

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 11:44:53 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/31/2020 4:01:18 PM	54053
Surr: BFB	103	70-130		%Rec	1	7/31/2020 4:01:18 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/1/2020 9:01:36 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 9:01:36 AM	54055
Surr: DNOP	42.0	30.4-154		%Rec	1	8/1/2020 9:01:36 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 4:01:18 PM	54053
Toluene	ND	0.048		mg/Kg	1	7/31/2020 4:01:18 PM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	7/31/2020 4:01:18 PM	54053
Xylenes, Total	ND	0.096		mg/Kg	1	7/31/2020 4:01:18 PM	54053
Surr: 1,2-Dichloroethane-d4	94.9	70-130		%Rec	1	7/31/2020 4:01:18 PM	54053
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	7/31/2020 4:01:18 PM	54053
Surr: Dibromofluoromethane	96.3	70-130		%Rec	1	7/31/2020 4:01:18 PM	54053
Surr: Toluene-d8	103	70-130		%Rec	1	7/31/2020 4:01:18 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 12 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S4, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:00:00 AM

Lab ID: 2007E40-013

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 11:57:14 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 4:31:21 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 4:31:21 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 9:25:45 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 9:25:45 AM	54055
Surr: DNOP	34.8	30.4-154		%Rec	1	8/1/2020 9:25:45 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 4:31:21 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 4:31:21 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 4:31:21 PM	54053
Xylenes, Total	ND	0.098		mg/Kg	1	7/31/2020 4:31:21 PM	54053
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	7/31/2020 4:31:21 PM	54053
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	7/31/2020 4:31:21 PM	54053
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	7/31/2020 4:31:21 PM	54053
Surr: Toluene-d8	102	70-130		%Rec	1	7/31/2020 4:31:21 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 13 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S4, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:05:00 AM

Lab ID: 2007E40-014

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 12:09:35 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 5:01:24 PM	54053
Surr: BFB	103	70-130		%Rec	1	7/31/2020 5:01:24 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/1/2020 9:50:06 AM	54055
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/1/2020 9:50:06 AM	54055
Surr: DNOP	35.5	30.4-154		%Rec	1	8/1/2020 9:50:06 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 5:01:24 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 5:01:24 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 5:01:24 PM	54053
Xylenes, Total	ND	0.098		mg/Kg	1	7/31/2020 5:01:24 PM	54053
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	1	7/31/2020 5:01:24 PM	54053
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	7/31/2020 5:01:24 PM	54053
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	7/31/2020 5:01:24 PM	54053
Surr: Toluene-d8	103	70-130		%Rec	1	7/31/2020 5:01:24 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 14 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S4, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:10:00 AM

Lab ID: 2007E40-015

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 12:21:55 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/31/2020 5:31:31 PM	54053
Surr: BFB	108	70-130		%Rec	1	7/31/2020 5:31:31 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/1/2020 10:14:23 AM	54055
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 10:14:23 AM	54055
Surr: DNOP	37.7	30.4-154		%Rec	1	8/1/2020 10:14:23 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 5:31:31 PM	54053
Toluene	ND	0.048		mg/Kg	1	7/31/2020 5:31:31 PM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	7/31/2020 5:31:31 PM	54053
Xylenes, Total	ND	0.096		mg/Kg	1	7/31/2020 5:31:31 PM	54053
Surr: 1,2-Dichloroethane-d4	97.0	70-130		%Rec	1	7/31/2020 5:31:31 PM	54053
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	7/31/2020 5:31:31 PM	54053
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	7/31/2020 5:31:31 PM	54053
Surr: Toluene-d8	103	70-130		%Rec	1	7/31/2020 5:31:31 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 15 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S4, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:15:00 AM

Lab ID: 2007E40-016

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 12:34:16 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 6:01:38 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 6:01:38 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2020 10:39:02 AM	54055
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 10:39:02 AM	54055
Surr: DNOP	36.0	30.4-154		%Rec	1	8/1/2020 10:39:02 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 6:01:38 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 6:01:38 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 6:01:38 PM	54053
Xylenes, Total	ND	0.099		mg/Kg	1	7/31/2020 6:01:38 PM	54053
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%Rec	1	7/31/2020 6:01:38 PM	54053
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	7/31/2020 6:01:38 PM	54053
Surr: Dibromofluoromethane	97.5	70-130		%Rec	1	7/31/2020 6:01:38 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 6:01:38 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 16 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S5, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:20:00 AM

Lab ID: 2007E40-017

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	6700	300		mg/Kg	100	8/5/2020 9:53:21 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/31/2020 6:31:24 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 6:31:24 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/1/2020 11:03:18 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 11:03:18 AM	54055
Surr: DNOP	42.4	30.4-154		%Rec	1	8/1/2020 11:03:18 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	7/31/2020 6:31:24 PM	54053
Toluene	ND	0.046		mg/Kg	1	7/31/2020 6:31:24 PM	54053
Ethylbenzene	ND	0.046		mg/Kg	1	7/31/2020 6:31:24 PM	54053
Xylenes, Total	ND	0.092		mg/Kg	1	7/31/2020 6:31:24 PM	54053
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	7/31/2020 6:31:24 PM	54053
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	7/31/2020 6:31:24 PM	54053
Surr: Dibromofluoromethane	94.3	70-130		%Rec	1	7/31/2020 6:31:24 PM	54053
Surr: Toluene-d8	102	70-130		%Rec	1	7/31/2020 6:31:24 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 17 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S5, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:25:00 AM

Lab ID: 2007E40-018

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2500	150		mg/Kg	50	8/5/2020 10:05:41 AM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/31/2020 7:01:01 PM	54053
Surr: BFB	108	70-130		%Rec	1	7/31/2020 7:01:01 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/1/2020 11:27:51 AM	54055
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 11:27:51 AM	54055
Surr: DNOP	43.8	30.4-154		%Rec	1	8/1/2020 11:27:51 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	7/31/2020 7:01:01 PM	54053
Toluene	ND	0.049		mg/Kg	1	7/31/2020 7:01:01 PM	54053
Ethylbenzene	ND	0.049		mg/Kg	1	7/31/2020 7:01:01 PM	54053
Xylenes, Total	ND	0.098		mg/Kg	1	7/31/2020 7:01:01 PM	54053
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%Rec	1	7/31/2020 7:01:01 PM	54053
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	7/31/2020 7:01:01 PM	54053
Surr: Dibromofluoromethane	95.0	70-130		%Rec	1	7/31/2020 7:01:01 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 7:01:01 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 18 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S5, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:30:00 AM

Lab ID: 2007E40-019

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1800	60		mg/Kg	20	8/4/2020 1:36:01 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/31/2020 7:30:34 PM	54053
Surr: BFB	105	70-130		%Rec	1	7/31/2020 7:30:34 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 11:52:14 AM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 11:52:14 AM	54055
Surr: DNOP	44.8	30.4-154		%Rec	1	8/1/2020 11:52:14 AM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	7/31/2020 7:30:34 PM	54053
Toluene	ND	0.047		mg/Kg	1	7/31/2020 7:30:34 PM	54053
Ethylbenzene	ND	0.047		mg/Kg	1	7/31/2020 7:30:34 PM	54053
Xylenes, Total	ND	0.094		mg/Kg	1	7/31/2020 7:30:34 PM	54053
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%Rec	1	7/31/2020 7:30:34 PM	54053
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	7/31/2020 7:30:34 PM	54053
Surr: Dibromofluoromethane	96.1	70-130		%Rec	1	7/31/2020 7:30:34 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 7:30:34 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S5, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:35:00 AM

Lab ID: 2007E40-020

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	2100	60		mg/Kg	20	8/4/2020 1:48:21 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/31/2020 8:00:03 PM	54053
Surr: BFB	106	70-130		%Rec	1	7/31/2020 8:00:03 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 12:16:37 PM	54055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 12:16:37 PM	54055
Surr: DNOP	41.9	30.4-154		%Rec	1	8/1/2020 12:16:37 PM	54055
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 8:00:03 PM	54053
Toluene	ND	0.048		mg/Kg	1	7/31/2020 8:00:03 PM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	7/31/2020 8:00:03 PM	54053
Xylenes, Total	ND	0.096		mg/Kg	1	7/31/2020 8:00:03 PM	54053
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%Rec	1	7/31/2020 8:00:03 PM	54053
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	7/31/2020 8:00:03 PM	54053
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/31/2020 8:00:03 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 8:00:03 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 20 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S6, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:40:00 AM

Lab ID: 2007E40-021

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	100	60		mg/Kg	20	8/4/2020 2:00:42 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/31/2020 8:29:34 PM	54053
Surr: BFB	108	70-130		%Rec	1	7/31/2020 8:29:34 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2020 1:29:36 PM	54056
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 1:29:36 PM	54056
Surr: DNOP	38.3	30.4-154		%Rec	1	8/1/2020 1:29:36 PM	54056
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 8:29:34 PM	54053
Toluene	ND	0.047		mg/Kg	1	7/31/2020 8:29:34 PM	54053
Ethylbenzene	ND	0.047		mg/Kg	1	7/31/2020 8:29:34 PM	54053
Xylenes, Total	ND	0.095		mg/Kg	1	7/31/2020 8:29:34 PM	54053
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%Rec	1	7/31/2020 8:29:34 PM	54053
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	7/31/2020 8:29:34 PM	54053
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/31/2020 8:29:34 PM	54053
Surr: Toluene-d8	101	70-130		%Rec	1	7/31/2020 8:29:34 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S6, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:45:00 AM

Lab ID: 2007E40-022

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	170	60		mg/Kg	20	8/4/2020 2:13:02 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/31/2020 8:59:02 PM	54053
Surr: BFB	104	70-130		%Rec	1	7/31/2020 8:59:02 PM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/1/2020 2:42:40 PM	54056
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 2:42:40 PM	54056
Surr: DNOP	29.0	30.4-154	S	%Rec	1	8/1/2020 2:42:40 PM	54056
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/31/2020 8:59:02 PM	54053
Toluene	ND	0.047		mg/Kg	1	7/31/2020 8:59:02 PM	54053
Ethylbenzene	ND	0.047		mg/Kg	1	7/31/2020 8:59:02 PM	54053
Xylenes, Total	ND	0.095		mg/Kg	1	7/31/2020 8:59:02 PM	54053
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%Rec	1	7/31/2020 8:59:02 PM	54053
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	7/31/2020 8:59:02 PM	54053
Surr: Dibromofluoromethane	99.6	70-130		%Rec	1	7/31/2020 8:59:02 PM	54053
Surr: Toluene-d8	105	70-130		%Rec	1	7/31/2020 8:59:02 PM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S6, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:50:00 AM

Lab ID: 2007E40-023

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	220	60		mg/Kg	20	8/4/2020 2:25:23 PM	54145
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 12:24:43 AM	54053
Surr: BFB	105	70-130		%Rec	1	8/1/2020 12:24:43 AM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2020 3:06:58 PM	54056
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 3:06:58 PM	54056
Surr: DNOP	28.6	30.4-154	S	%Rec	1	8/1/2020 3:06:58 PM	54056
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	8/1/2020 12:24:43 AM	54053
Toluene	ND	0.048		mg/Kg	1	8/1/2020 12:24:43 AM	54053
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 12:24:43 AM	54053
Xylenes, Total	ND	0.095		mg/Kg	1	8/1/2020 12:24:43 AM	54053
Surr: 1,2-Dichloroethane-d4	98.9	70-130		%Rec	1	8/1/2020 12:24:43 AM	54053
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	8/1/2020 12:24:43 AM	54053
Surr: Dibromofluoromethane	106	70-130		%Rec	1	8/1/2020 12:24:43 AM	54053
Surr: Toluene-d8	99.2	70-130		%Rec	1	8/1/2020 12:24:43 AM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 23 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S6, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 10:55:00 AM

Lab ID: 2007E40-024

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	220	60		mg/Kg	20	8/4/2020 3:27:06 PM	54149
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2020 12:54:06 AM	54053
Surr: BFB	102	70-130		%Rec	1	8/1/2020 12:54:06 AM	54053
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/1/2020 3:31:22 PM	54056
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 3:31:22 PM	54056
Surr: DNOP	29.1	30.4-154	S	%Rec	1	8/1/2020 3:31:22 PM	54056
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	8/1/2020 12:54:06 AM	54053
Toluene	ND	0.050		mg/Kg	1	8/1/2020 12:54:06 AM	54053
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2020 12:54:06 AM	54053
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2020 12:54:06 AM	54053
Surr: 1,2-Dichloroethane-d4	95.6	70-130		%Rec	1	8/1/2020 12:54:06 AM	54053
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	8/1/2020 12:54:06 AM	54053
Surr: Dibromofluoromethane	102	70-130		%Rec	1	8/1/2020 12:54:06 AM	54053
Surr: Toluene-d8	102	70-130		%Rec	1	8/1/2020 12:54:06 AM	54053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S7, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:00:00 AM

Lab ID: 2007E40-025

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	100	59		mg/Kg	20	8/4/2020 4:28:49 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/1/2020 4:20:08 PM	54056
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 4:20:08 PM	54056
Surr: DNOP	27.2	30.4-154	S	%Rec	1	8/1/2020 4:20:08 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2020 12:54:24 PM	54054
Surr: BFB	98.9	75.3-105		%Rec	1	8/1/2020 12:54:24 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/1/2020 12:54:24 PM	54054
Toluene	ND	0.046		mg/Kg	1	8/1/2020 12:54:24 PM	54054
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2020 12:54:24 PM	54054
Xylenes, Total	ND	0.093		mg/Kg	1	8/1/2020 12:54:24 PM	54054
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/1/2020 12:54:24 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S7, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:05:00 AM

Lab ID: 2007E40-026

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	83	60		mg/Kg	20	8/4/2020 5:05:49 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2020 4:44:24 PM	54056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2020 4:44:24 PM	54056
Surr: DNOP	27.0	30.4-154	S	%Rec	1	8/1/2020 4:44:24 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2020 2:04:48 PM	54054
Surr: BFB	98.5	75.3-105		%Rec	1	8/1/2020 2:04:48 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 2:04:48 PM	54054
Toluene	ND	0.050		mg/Kg	1	8/1/2020 2:04:48 PM	54054
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2020 2:04:48 PM	54054
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2020 2:04:48 PM	54054
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/1/2020 2:04:48 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 26 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S7, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:10:00 AM

Lab ID: 2007E40-027

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:18:11 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2020 5:08:53 PM	54056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2020 5:08:53 PM	54056
Surr: DNOP	28.1	30.4-154	S	%Rec	1	8/1/2020 5:08:53 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 3:15:24 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 3:15:24 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 3:15:24 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 3:15:24 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 3:15:24 PM	54054
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2020 3:15:24 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 3:15:24 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 27 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S7, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:15:00 AM

Lab ID: 2007E40-028

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	68	60		mg/Kg	20	8/4/2020 5:30:32 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/1/2020 5:33:07 PM	54056
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 5:33:07 PM	54056
Surr: DNOP	28.5	30.4-154	S	%Rec	1	8/1/2020 5:33:07 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 3:38:57 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 3:38:57 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 3:38:57 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 3:38:57 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 3:38:57 PM	54054
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2020 3:38:57 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 3:38:57 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S8, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:20:00 AM

Lab ID: 2007E40-029

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:42:52 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/1/2020 5:57:34 PM	54056
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 5:57:34 PM	54056
Surr: DNOP	22.7	30.4-154	S	%Rec	1	8/1/2020 5:57:34 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 4:02:32 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 4:02:32 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 4:02:32 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 4:02:32 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 4:02:32 PM	54054
Xylenes, Total	ND	0.098		mg/Kg	1	8/1/2020 4:02:32 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 4:02:32 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 29 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S8, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:25:00 AM

Lab ID: 2007E40-030

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:55:13 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/1/2020 6:21:57 PM	54056
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 6:21:57 PM	54056
Surr: DNOP	25.3	30.4-154	S	%Rec	1	8/1/2020 6:21:57 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 4:26:10 PM	54054
Surr: BFB	100	75.3-105		%Rec	1	8/1/2020 4:26:10 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 4:26:10 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 4:26:10 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 4:26:10 PM	54054
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2020 4:26:10 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 4:26:10 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 30 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S8, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:30:00 AM

Lab ID: 2007E40-031

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 6:32:16 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2020 6:46:34 PM	54056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2020 6:46:34 PM	54056
Surr: DNOP	24.8	30.4-154	S	%Rec	1	8/1/2020 6:46:34 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 4:49:49 PM	54054
Surr: BFB	99.8	75.3-105		%Rec	1	8/1/2020 4:49:49 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 4:49:49 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 4:49:49 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 4:49:49 PM	54054
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2020 4:49:49 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 4:49:49 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 31 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S8, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:35:00 AM

Lab ID: 2007E40-032

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 6:44:37 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/1/2020 7:10:50 PM	54056
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/1/2020 7:10:50 PM	54056
Surr: DNOP	30.0	30.4-154	S	%Rec	1	8/1/2020 7:10:50 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 5:13:25 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 5:13:25 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 5:13:25 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 5:13:25 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 5:13:25 PM	54054
Xylenes, Total	ND	0.096		mg/Kg	1	8/1/2020 5:13:25 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 5:13:25 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S9, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:40:00 AM

Lab ID: 2007E40-033

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 6:56:58 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/1/2020 7:35:17 PM	54056
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 7:35:17 PM	54056
Surr: DNOP	23.0	30.4-154	S	%Rec	1	8/1/2020 7:35:17 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/1/2020 5:36:58 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 5:36:58 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/1/2020 5:36:58 PM	54054
Toluene	ND	0.047		mg/Kg	1	8/1/2020 5:36:58 PM	54054
Ethylbenzene	ND	0.047		mg/Kg	1	8/1/2020 5:36:58 PM	54054
Xylenes, Total	ND	0.093		mg/Kg	1	8/1/2020 5:36:58 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 5:36:58 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 33 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S9, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:45:00 AM

Lab ID: 2007E40-034

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	59		mg/Kg	20	8/4/2020 7:09:18 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2020 7:59:39 PM	54056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2020 7:59:39 PM	54056
Surr: DNOP	24.3	30.4-154	S	%Rec	1	8/1/2020 7:59:39 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/1/2020 6:00:31 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 6:00:31 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 6:00:31 PM	54054
Toluene	ND	0.047		mg/Kg	1	8/1/2020 6:00:31 PM	54054
Ethylbenzene	ND	0.047		mg/Kg	1	8/1/2020 6:00:31 PM	54054
Xylenes, Total	ND	0.094		mg/Kg	1	8/1/2020 6:00:31 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 6:00:31 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 34 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S9, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:50:00 AM

Lab ID: 2007E40-035

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 7:21:39 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/1/2020 8:24:11 PM	54056
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2020 8:24:11 PM	54056
Surr: DNOP	25.1	30.4-154	S	%Rec	1	8/1/2020 8:24:11 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2020 7:10:56 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 7:10:56 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/1/2020 7:10:56 PM	54054
Toluene	ND	0.046		mg/Kg	1	8/1/2020 7:10:56 PM	54054
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2020 7:10:56 PM	54054
Xylenes, Total	ND	0.093		mg/Kg	1	8/1/2020 7:10:56 PM	54054
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	8/1/2020 7:10:56 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S9, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 11:55:00 AM

Lab ID: 2007E40-036

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 7:33:59 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2020 8:48:35 PM	54056
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 8:48:35 PM	54056
Surr: DNOP	26.9	30.4-154	S	%Rec	1	8/1/2020 8:48:35 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2020 7:34:22 PM	54054
Surr: BFB	98.8	75.3-105		%Rec	1	8/1/2020 7:34:22 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/1/2020 7:34:22 PM	54054
Toluene	ND	0.046		mg/Kg	1	8/1/2020 7:34:22 PM	54054
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2020 7:34:22 PM	54054
Xylenes, Total	ND	0.092		mg/Kg	1	8/1/2020 7:34:22 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 7:34:22 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 36 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S10, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:00:00 PM

Lab ID: 2007E40-037

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 7:46:19 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/1/2020 9:13:05 PM	54056
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 9:13:05 PM	54056
Surr: DNOP	27.0	30.4-154	S	%Rec	1	8/1/2020 9:13:05 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 7:57:48 PM	54054
Surr: BFB	99.5	75.3-105		%Rec	1	8/1/2020 7:57:48 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 7:57:48 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 7:57:48 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 7:57:48 PM	54054
Xylenes, Total	ND	0.096		mg/Kg	1	8/1/2020 7:57:48 PM	54054
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/1/2020 7:57:48 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 37 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S10, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:05:00 PM

Lab ID: 2007E40-038

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 7:58:39 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2020 9:37:26 PM	54056
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2020 9:37:26 PM	54056
Surr: DNOP	26.8	30.4-154	S	%Rec	1	8/1/2020 9:37:26 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 8:21:12 PM	54054
Surr: BFB	100	75.3-105		%Rec	1	8/1/2020 8:21:12 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 8:21:12 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 8:21:12 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 8:21:12 PM	54054
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2020 8:21:12 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 8:21:12 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 38 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S10, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:10:00 PM

Lab ID: 2007E40-039

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 8:10:59 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2020 10:01:51 PM	54056
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2020 10:01:51 PM	54056
Surr: DNOP	26.2	30.4-154	S	%Rec	1	8/1/2020 10:01:51 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 8:44:35 PM	54054
Surr: BFB	99.6	75.3-105		%Rec	1	8/1/2020 8:44:35 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 8:44:35 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 8:44:35 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 8:44:35 PM	54054
Xylenes, Total	ND	0.098		mg/Kg	1	8/1/2020 8:44:35 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 8:44:35 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 39 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S10, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:15:00 PM

Lab ID: 2007E40-040

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 8:23:20 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2020 10:26:11 PM	54056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2020 10:26:11 PM	54056
Surr: DNOP	26.1	30.4-154	S	%Rec	1	8/1/2020 10:26:11 PM	54056
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 9:08:05 PM	54054
Surr: BFB	99.1	75.3-105		%Rec	1	8/1/2020 9:08:05 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 9:08:05 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 9:08:05 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 9:08:05 PM	54054
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2020 9:08:05 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 9:08:05 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 40 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S11, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:20:00 PM

Lab ID: 2007E40-041

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 9:00:22 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/30/2020 3:26:55 PM	54064
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/30/2020 3:26:55 PM	54064
Surr: DNOP	106	30.4-154		%Rec	1	7/30/2020 3:26:55 PM	54064
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 9:31:27 PM	54054
Surr: BFB	99.1	75.3-105		%Rec	1	8/1/2020 9:31:27 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 9:31:27 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 9:31:27 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 9:31:27 PM	54054
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2020 9:31:27 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 9:31:27 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 41 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S12, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:25:00 PM

Lab ID: 2007E40-042

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 9:12:43 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/30/2020 3:56:32 PM	54064
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/30/2020 3:56:32 PM	54064
Surr: DNOP	100	30.4-154		%Rec	1	7/30/2020 3:56:32 PM	54064
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2020 9:54:47 PM	54054
Surr: BFB	99.4	75.3-105		%Rec	1	8/1/2020 9:54:47 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 9:54:47 PM	54054
Toluene	ND	0.049		mg/Kg	1	8/1/2020 9:54:47 PM	54054
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2020 9:54:47 PM	54054
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2020 9:54:47 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 9:54:47 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 42 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S12, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:30:00 PM

Lab ID: 2007E40-043

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	61		mg/Kg	20	8/4/2020 9:25:02 PM	54149
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/30/2020 4:06:28 PM	54064
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/30/2020 4:06:28 PM	54064
Surr: DNOP	93.0	30.4-154		%Rec	1	7/30/2020 4:06:28 PM	54064
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2020 10:18:11 PM	54054
Surr: BFB	101	75.3-105		%Rec	1	8/1/2020 10:18:11 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/1/2020 10:18:11 PM	54054
Toluene	ND	0.050		mg/Kg	1	8/1/2020 10:18:11 PM	54054
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2020 10:18:11 PM	54054
Xylenes, Total	ND	0.10		mg/Kg	1	8/1/2020 10:18:11 PM	54054
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/1/2020 10:18:11 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 43 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S12, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:35:00 PM

Lab ID: 2007E40-044

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 2:07:56 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/30/2020 4:16:24 PM	54064
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/30/2020 4:16:24 PM	54064
Surr: DNOP	99.5	30.4-154		%Rec	1	7/30/2020 4:16:24 PM	54064
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2020 10:41:35 PM	54054
Surr: BFB	99.8	75.3-105		%Rec	1	8/1/2020 10:41:35 PM	54054
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/1/2020 10:41:35 PM	54054
Toluene	ND	0.048		mg/Kg	1	8/1/2020 10:41:35 PM	54054
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2020 10:41:35 PM	54054
Xylenes, Total	ND	0.096		mg/Kg	1	8/1/2020 10:41:35 PM	54054
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/1/2020 10:41:35 PM	54054

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 44 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S13, 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:40:00 PM

Lab ID: 2007E40-045

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	130	60		mg/Kg	20	8/4/2020 2:45:09 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/31/2020 5:15:20 PM	54061
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/31/2020 5:15:20 PM	54061
Surr: DNOP	76.4	30.4-154		%Rec	1	7/31/2020 5:15:20 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2020 1:02:05 AM	54058
Surr: BFB	98.8	75.3-105		%Rec	1	8/2/2020 1:02:05 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 1:02:05 AM	54058
Toluene	ND	0.048		mg/Kg	1	8/2/2020 1:02:05 AM	54058
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2020 1:02:05 AM	54058
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2020 1:02:05 AM	54058
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/2/2020 1:02:05 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 45 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S13, 1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:45:00 PM

Lab ID: 2007E40-046

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	95	60		mg/Kg	20	8/4/2020 2:57:33 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/31/2020 6:28:25 PM	54061
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/31/2020 6:28:25 PM	54061
Surr: DNOP	80.6	30.4-154		%Rec	1	7/31/2020 6:28:25 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2020 2:12:34 AM	54058
Surr: BFB	98.5	75.3-105		%Rec	1	8/2/2020 2:12:34 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 2:12:34 AM	54058
Toluene	ND	0.048		mg/Kg	1	8/2/2020 2:12:34 AM	54058
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2020 2:12:34 AM	54058
Xylenes, Total	ND	0.095		mg/Kg	1	8/2/2020 2:12:34 AM	54058
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/2/2020 2:12:34 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 46 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S13, 2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:50:00 PM

Lab ID: 2007E40-047

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 3:09:58 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	7/31/2020 6:52:42 PM	54061
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/31/2020 6:52:42 PM	54061
Surr: DNOP	90.2	30.4-154		%Rec	1	7/31/2020 6:52:42 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2020 3:23:00 AM	54058
Surr: BFB	97.5	75.3-105		%Rec	1	8/2/2020 3:23:00 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/2/2020 3:23:00 AM	54058
Toluene	ND	0.050		mg/Kg	1	8/2/2020 3:23:00 AM	54058
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2020 3:23:00 AM	54058
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2020 3:23:00 AM	54058
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/2/2020 3:23:00 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 47 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S13, 3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 12:55:00 PM

Lab ID: 2007E40-048

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 3:22:22 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/31/2020 7:17:18 PM	54061
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/31/2020 7:17:18 PM	54061
Surr: DNOP	64.4	30.4-154		%Rec	1	7/31/2020 7:17:18 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2020 3:46:33 AM	54058
Surr: BFB	98.6	75.3-105		%Rec	1	8/2/2020 3:46:33 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 3:46:33 AM	54058
Toluene	ND	0.047		mg/Kg	1	8/2/2020 3:46:33 AM	54058
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2020 3:46:33 AM	54058
Xylenes, Total	ND	0.095		mg/Kg	1	8/2/2020 3:46:33 AM	54058
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/2/2020 3:46:33 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 48 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S14-0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 1:00:00 PM

Lab ID: 2007E40-049

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 3:34:47 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/31/2020 7:41:38 PM	54061
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/31/2020 7:41:38 PM	54061
Surr: DNOP	28.2	30.4-154	S	%Rec	1	7/31/2020 7:41:38 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2020 4:09:57 AM	54058
Surr: BFB	99.8	75.3-105		%Rec	1	8/2/2020 4:09:57 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/2/2020 4:09:57 AM	54058
Toluene	ND	0.047		mg/Kg	1	8/2/2020 4:09:57 AM	54058
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2020 4:09:57 AM	54058
Xylenes, Total	ND	0.094		mg/Kg	1	8/2/2020 4:09:57 AM	54058
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/2/2020 4:09:57 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 49 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S14-1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 1:00:00 PM

Lab ID: 2007E40-050

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 4:12:01 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/31/2020 8:06:06 PM	54061
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/31/2020 8:06:06 PM	54061
Surr: DNOP	44.3	30.4-154		%Rec	1	7/31/2020 8:06:06 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2020 4:33:24 AM	54058
Surr: BFB	99.1	75.3-105		%Rec	1	8/2/2020 4:33:24 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/2/2020 4:33:24 AM	54058
Toluene	ND	0.049		mg/Kg	1	8/2/2020 4:33:24 AM	54058
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2020 4:33:24 AM	54058
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2020 4:33:24 AM	54058
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/2/2020 4:33:24 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 50 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S14-2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 1:00:00 PM

Lab ID: 2007E40-051

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 4:24:26 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/31/2020 8:30:20 PM	54061
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/31/2020 8:30:20 PM	54061
Surr: DNOP	40.3	30.4-154		%Rec	1	7/31/2020 8:30:20 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2020 4:56:54 AM	54058
Surr: BFB	98.1	75.3-105		%Rec	1	8/2/2020 4:56:54 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 4:56:54 AM	54058
Toluene	ND	0.048		mg/Kg	1	8/2/2020 4:56:54 AM	54058
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2020 4:56:54 AM	54058
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2020 4:56:54 AM	54058
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/2/2020 4:56:54 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 51 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S14-3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020 1:00:00 PM

Lab ID: 2007E40-052

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 4:36:50 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/31/2020 8:54:44 PM	54061
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/31/2020 8:54:44 PM	54061
Surr: DNOP	38.2	30.4-154		%Rec	1	7/31/2020 8:54:44 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2020 5:20:34 AM	54058
Surr: BFB	99.2	75.3-105		%Rec	1	8/2/2020 5:20:34 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 5:20:34 AM	54058
Toluene	ND	0.048		mg/Kg	1	8/2/2020 5:20:34 AM	54058
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2020 5:20:34 AM	54058
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2020 5:20:34 AM	54058
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/2/2020 5:20:34 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 52 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S11-1'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020

Lab ID: 2007E40-053

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 4:49:15 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/31/2020 9:18:59 PM	54061
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/31/2020 9:18:59 PM	54061
Surr: DNOP	49.2	30.4-154		%Rec	1	7/31/2020 9:18:59 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2020 5:44:33 AM	54058
Surr: BFB	103	75.3-105		%Rec	1	8/2/2020 5:44:33 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/2/2020 5:44:33 AM	54058
Toluene	ND	0.047		mg/Kg	1	8/2/2020 5:44:33 AM	54058
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2020 5:44:33 AM	54058
Xylenes, Total	ND	0.094		mg/Kg	1	8/2/2020 5:44:33 AM	54058
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/2/2020 5:44:33 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 53 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S11-2'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020

Lab ID: 2007E40-054

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:01:39 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/31/2020 9:43:19 PM	54061
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/31/2020 9:43:19 PM	54061
Surr: DNOP	42.7	30.4-154		%Rec	1	7/31/2020 9:43:19 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2020 6:08:06 AM	54058
Surr: BFB	97.9	75.3-105		%Rec	1	8/2/2020 6:08:06 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 6:08:06 AM	54058
Toluene	ND	0.049		mg/Kg	1	8/2/2020 6:08:06 AM	54058
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2020 6:08:06 AM	54058
Xylenes, Total	ND	0.097		mg/Kg	1	8/2/2020 6:08:06 AM	54058
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/2/2020 6:08:06 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 54 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S11-3'

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020

Lab ID: 2007E40-055

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:14:03 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/31/2020 10:07:29 PM	54061
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/31/2020 10:07:29 PM	54061
Surr: DNOP	41.2	30.4-154		%Rec	1	7/31/2020 10:07:29 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2020 7:18:33 AM	54058
Surr: BFB	99.4	75.3-105		%Rec	1	8/2/2020 7:18:33 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/2/2020 7:18:33 AM	54058
Toluene	ND	0.049		mg/Kg	1	8/2/2020 7:18:33 AM	54058
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2020 7:18:33 AM	54058
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2020 7:18:33 AM	54058
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/2/2020 7:18:33 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 55 of 72

Analytical Report

Lab Order 2007E40

Date Reported: 8/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S12 0-6"

Project: Emerald PWU 20 4H

Collection Date: 7/28/2020

Lab ID: 2007E40-056

Matrix: SOIL

Received Date: 7/29/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/4/2020 5:26:28 PM	54155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/31/2020 10:31:50 PM	54061
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/31/2020 10:31:50 PM	54061
Surr: DNOP	37.9	30.4-154		%Rec	1	7/31/2020 10:31:50 PM	54061
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/2/2020 7:42:01 AM	54058
Surr: BFB	100	75.3-105		%Rec	1	8/2/2020 7:42:01 AM	54058
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/2/2020 7:42:01 AM	54058
Toluene	ND	0.046		mg/Kg	1	8/2/2020 7:42:01 AM	54058
Ethylbenzene	ND	0.046		mg/Kg	1	8/2/2020 7:42:01 AM	54058
Xylenes, Total	ND	0.093		mg/Kg	1	8/2/2020 7:42:01 AM	54058
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/2/2020 7:42:01 AM	54058

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 56 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: MB-54139	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 54139	RunNo: 70812								
Prep Date: 8/3/2020	Analysis Date: 8/3/2020	SeqNo: 2465249 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-54139	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 54139	RunNo: 70812								
Prep Date: 8/3/2020	Analysis Date: 8/3/2020	SeqNo: 2465250 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	90	110			

Sample ID: MB-54155	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 54155	RunNo: 70830								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466155 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-54155	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 54155	RunNo: 70830								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466156 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Sample ID: MB-54149	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 54149	RunNo: 70833								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466373 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-54149	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 54149	RunNo: 70833								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466374 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 57 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **2007E40****06-Aug-20****Client:** Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: MB-54145	SampType: mbk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 54145	RunNo: 70833								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466397	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-54145	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 54145	RunNo: 70833								
Prep Date: 8/4/2020	Analysis Date: 8/4/2020	SeqNo: 2466398	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 58 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: LCS-54064	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 54064	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 7/30/2020	SeqNo: 2461179			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	70	130			
Surr: DNOP	4.7		5.000		93.4	30.4	154			

Sample ID: MB-54064	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 54064	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 7/30/2020	SeqNo: 2461181			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.3	30.4	154			

Sample ID: 2007E40-041AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S11, 0-6"	Batch ID: 54064	RunNo: 70757								
Prep Date: 7/30/2020	Analysis Date: 7/30/2020	SeqNo: 2462536			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.8	49.02	0	95.8	47.4	136			
Surr: DNOP	5.3		4.902		108	30.4	154			

Sample ID: 2007E40-041AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S11, 0-6"	Batch ID: 54064	RunNo: 70757								
Prep Date: 7/30/2020	Analysis Date: 7/30/2020	SeqNo: 2462537			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.8	48.92	0	94.1	47.4	136	1.98	43.4	
Surr: DNOP	4.5		4.892		92.3	30.4	154	0	0	

Sample ID: 2007E40-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S1, 0-6"	Batch ID: 54055	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2465086			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.6	48.03	4.076	89.7	47.4	136			
Surr: DNOP	1.7		4.803		35.1	30.4	154			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 59 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: 2007E40-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S1, 0-6"	Batch ID: 54055	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2465087	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.4	46.82	4.076	90.0	47.4	136	2.02	43.4	
Surr: DNOP	1.6		4.682		34.3	30.4	154	0	0	

Sample ID: 2007E40-021AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S6, 0-6"	Batch ID: 54056	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2465108	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.6	47.85	3.350	98.1	47.4	136			
Surr: DNOP	1.6		4.785		33.1	30.4	154			

Sample ID: 2007E40-021AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S6, 0-6"	Batch ID: 54056	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2465109	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.7	48.31	3.350	94.8	47.4	136	2.30	43.4	
Surr: DNOP	1.4		4.831		28.0	30.4	154	0	0	S

Sample ID: 2007E40-045AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S13, 0-6"	Batch ID: 54061	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2465130	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.7	48.69	2.947	99.1	47.4	136			
Surr: DNOP	2.8		4.869		57.0	30.4	154			

Sample ID: 2007E40-045AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S13, 0-6"	Batch ID: 54061	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2465131	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.4	46.90	2.947	99.3	47.4	136	3.31	43.4	
Surr: DNOP	2.4		4.690		50.6	30.4	154	0	0	

Sample ID: LCS-54055	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 54055	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2465151	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 60 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: LCS-54055	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 54055		RunNo: 70721							
Prep Date: 7/30/2020	Analysis Date: 8/1/2020		SeqNo: 2465151		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	70	130			
Surr: DNOP	1.7		5.000		33.7	30.4	154			

Sample ID: LCS-54056	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 54056		RunNo: 70721							
Prep Date: 7/30/2020	Analysis Date: 8/1/2020		SeqNo: 2465152		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	70	130			
Surr: DNOP	1.9		5.000		38.4	30.4	154			

Sample ID: LCS-54061	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 54061		RunNo: 70721							
Prep Date: 7/30/2020	Analysis Date: 7/31/2020		SeqNo: 2465153		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	70	130			
Surr: DNOP	5.2		5.000		104	30.4	154			

Sample ID: MB-54055	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 54055		RunNo: 70721							
Prep Date: 7/30/2020	Analysis Date: 8/1/2020		SeqNo: 2465154		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	3.8		10.00		38.3	30.4	154			

Sample ID: MB-54056	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 54056		RunNo: 70721							
Prep Date: 7/30/2020	Analysis Date: 8/1/2020		SeqNo: 2465155		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	4.1		10.00		41.4	30.4	154			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 61 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **2007E40****06-Aug-20****Client:** Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: MB-54061	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 54061	RunNo: 70721								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2465156	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	30.4	154			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 62 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54054	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463134 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.6	75.3	105			

Sample ID: lcs-54054	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463135 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.2	72.5	106			
Surr: BFB	1100		1000		108	75.3	105			S

Sample ID: 2007e40-026ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S7, 1'	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463138 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.51	0	88.3	61.3	114			
Surr: BFB	1100		980.4		111	75.3	105			S

Sample ID: 2007e40-026amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S7, 1'	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463139 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.90	0	94.7	61.3	114	8.57	20	
Surr: BFB	1100		996.0		111	75.3	105	0	0	S

Sample ID: mb-54058	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/2/2020	SeqNo: 2463158 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	75.3	105			

Sample ID: lcs-54058	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2463159 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: Ics-54058	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 54058			RunNo: 70777						
Prep Date: 7/30/2020	Analysis Date: 8/1/2020			SeqNo: 2463159		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.3	72.5	106			
Surr: BFB	1100		1000		110	75.3	105			S

Sample ID: 2007e40-045ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: S13, 0-6"	Batch ID: 54058			RunNo: 70777						
Prep Date: 7/30/2020	Analysis Date: 8/2/2020			SeqNo: 2463161		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.72	0	93.4	61.3	114			
Surr: BFB	1000		948.8		109	75.3	105			S

Sample ID: 2007e40-045amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: S13, 0-6"	Batch ID: 54058			RunNo: 70777						
Prep Date: 7/30/2020	Analysis Date: 8/2/2020			SeqNo: 2463162		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.65	0	83.9	61.3	114	6.83	20	
Surr: BFB	1100		986.2		107	75.3	105	0	0	S

Sample ID: mb-54080	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 54080			RunNo: 70777						
Prep Date: 7/30/2020	Analysis Date: 8/2/2020			SeqNo: 2463182		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		98.8	75.3	105			

Sample ID: Ics-54080	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 54080			RunNo: 70777						
Prep Date: 7/30/2020	Analysis Date: 8/2/2020			SeqNo: 2463183		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		111	75.3	105			S

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54054	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463213	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: LCS-54054	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463214	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.7	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.3	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID: 2007e40-025ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: S7, 0-6"	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463216	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9653	0	92.3	76.3	120			
Toluene	0.90	0.048	0.9653	0	93.6	78.5	120			
Ethylbenzene	0.93	0.048	0.9653	0	96.1	78.1	124			
Xylenes, Total	2.8	0.097	2.896	0	96.7	79.3	125			
Surr: 4-Bromofluorobenzene	1.0		0.9653		105	80	120			

Sample ID: 2007e40-025amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: S7, 0-6"	Batch ID: 54054	RunNo: 70777								
Prep Date: 7/29/2020	Analysis Date: 8/1/2020	SeqNo: 2463217	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9443	0	93.9	76.3	120	0.477	20	
Toluene	0.90	0.047	0.9443	0	95.4	78.5	120	0.280	20	
Ethylbenzene	0.91	0.047	0.9443	0	96.9	78.1	124	1.38	20	
Xylenes, Total	2.8	0.094	2.833	0	97.8	79.3	125	1.10	20	
Surr: 4-Bromofluorobenzene	1.0		0.9443		106	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54058	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/2/2020	SeqNo: 2463237			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID: LCS-54058	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/1/2020	SeqNo: 2463238			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	80	120			
Toluene	0.95	0.050	1.000	0	94.5	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID: 2007e40-046ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: S13, 1'	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/2/2020	SeqNo: 2463241			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	0.9881	0	85.7	76.3	120			
Toluene	0.91	0.049	0.9881	0.01047	91.2	78.5	120			
Ethylbenzene	0.94	0.049	0.9881	0	94.8	78.1	124			
Xylenes, Total	2.8	0.099	2.964	0	95.4	79.3	125			
Surr: 4-Bromofluorobenzene	1.0		0.9881		104	80	120			

Sample ID: 2007e40-046amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: S13, 1'	Batch ID: 54058	RunNo: 70777								
Prep Date: 7/30/2020	Analysis Date: 8/2/2020	SeqNo: 2463242			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9542	0	92.0	76.3	120	3.53	20	
Toluene	0.90	0.048	0.9542	0.01047	92.8	78.5	120	1.80	20	
Ethylbenzene	0.92	0.048	0.9542	0	96.2	78.1	124	1.95	20	
Xylenes, Total	2.8	0.095	2.863	0	97.5	79.3	125	1.22	20	
Surr: 4-Bromofluorobenzene	1.0		0.9542		108	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54080	SampType: MBLK				TestCode: EPA Method 8021B: Volatiles					
Client ID: PBS	Batch ID: 54080				RunNo: 70777					
Prep Date: 7/30/2020	Analysis Date: 8/2/2020				SeqNo: 2463261	Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: LCS-54080	SampType: LCS				TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS	Batch ID: 54080				RunNo: 70777					
Prep Date: 7/30/2020	Analysis Date: 8/2/2020				SeqNo: 2463262	Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 67 of 72

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54053	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461724	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.9	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.0	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.53		0.5000		107	70	130			

Sample ID: lcs-54053	SampType: LCS4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461725	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	80	120			
Toluene	1.0	0.050	1.000	0	104	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.1	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.9	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.0	70	130			
Surr: Toluene-d8	0.53		0.5000		107	70	130			

Sample ID: 2007e40-005ams	SampType: MS4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: S2, 0-6"	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461733	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9625	0	107	71.1	115			
Toluene	1.0	0.048	0.9625	0	107	79.6	132			
Ethylbenzene	1.0	0.048	0.9625	0	106	83.8	134			
Xylenes, Total	3.1	0.096	2.887	0	107	82.4	132			
Surr: 1,2-Dichloroethane-d4	0.46		0.4812		95.7	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.4812		93.6	70	130			
Surr: Dibromofluoromethane	0.48		0.4812		100	70	130			
Surr: Toluene-d8	0.50		0.4812		104	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: 2007e40-005amsd	SampType: MSD4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: S2, 0-6"	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461742	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9775	0	103	71.1	115	2.09	20	
Toluene	1.0	0.049	0.9775	0	107	79.6	132	1.97	20	
Ethylbenzene	1.0	0.049	0.9775	0	105	83.8	134	0.497	20	
Xylenes, Total	3.1	0.098	2.933	0	105	82.4	132	0.454	20	
Surr: 1,2-Dichloroethane-d4	0.47		0.4888		95.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.46		0.4888		94.5	70	130	0	0	
Surr: Dibromofluoromethane	0.51		0.4888		105	70	130	0	0	
Surr: Toluene-d8	0.51		0.4888		105	70	130	0	0	

Sample ID: mb-54045	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: 54045	RunNo: 70747								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2462218	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.4	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID: lcs-54045	SampType: LCS4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batch ID: 54045	RunNo: 70747								
Prep Date: 7/29/2020	Analysis Date: 7/30/2020	SeqNo: 2462219	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.4	80	120			
Toluene	0.99	0.050	1.000	0	98.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.49		0.5000		98.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54073	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: 54073	RunNo: 70766								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2462671			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.7	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.7	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

Sample ID: lcs-54073	SampType: LCS4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batch ID: 54073	RunNo: 70766								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2462672			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.7	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.7	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			

Sample ID: mb-54070	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: 54070	RunNo: 70769								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2462806			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.8	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: lcs-54070	SampType: LCS4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batch ID: 54070	RunNo: 70769								
Prep Date: 7/30/2020	Analysis Date: 7/31/2020	SeqNo: 2462807			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.1	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.49		0.5000		97.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: mb-54053	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461770 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	540		500.0		109	70	130			

Sample ID: lcs-54053	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461771 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.4	70	130			
Surr: BFB	510		500.0		101	70	130			

Sample ID: 2007e40-006ams	SampType: MS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: S2, 1'	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461774 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.98	0	95.6	49.2	122			
Surr: BFB	500		499.5		101	70	130			

Sample ID: 2007e40-006amsd	SampType: MSD	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: S2, 1'	Batch ID: 54053	RunNo: 70739								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2461775 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.73	0	91.2	49.2	122	5.66	20	
Surr: BFB	510		494.6		102	70	130	0	0	

Sample ID: mb-54045	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 54045	RunNo: 70747								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2462278 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	510		500.0		101	70	130			

Sample ID: lcs-54045	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 54045	RunNo: 70747								
Prep Date: 7/29/2020	Analysis Date: 7/31/2020	SeqNo: 2462279 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007E40

06-Aug-20

Client: Pima Environmental Services LLC**Project:** Emerald PWU 20 4H

Sample ID: Ics-54045	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: 54045			RunNo: 70747						
Prep Date: 7/29/2020	Analysis Date: 7/31/2020			SeqNo: 2462279		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.0	70	130			
Surr: BFB	520		500.0		105	70	130			

Sample ID: mb-54073	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: 54073			RunNo: 70766						
Prep Date: 7/30/2020	Analysis Date: 7/31/2020			SeqNo: 2462708		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	510		500.0		102	70	130			

Sample ID: Ics-54073	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: 54073			RunNo: 70766						
Prep Date: 7/30/2020	Analysis Date: 7/31/2020			SeqNo: 2462709		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	520		500.0		104	70	130			

Sample ID: mb-54070	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: 54070			RunNo: 70769						
Prep Date: 7/30/2020	Analysis Date: 7/31/2020			SeqNo: 2462847		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	520		500.0		103	70	130			

Sample ID: Ics-54070	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: 54070			RunNo: 70769						
Prep Date: 7/30/2020	Analysis Date: 7/31/2020			SeqNo: 2462848		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	520		500.0		103	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Pima Environmental Services LLC

Work Order Number: 2007E40

RcptNo: 1

Received By: Cheyenne Cason 7/29/2020 9:30:00 AM

Completed By: Juan Rojas 7/29/2020 9:49:26 AM

Reviewed By: EM 7/29/20

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
(≤ 2 or >12 unless noted)

Adjusted? _____

Checked by: CMC 7/29/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

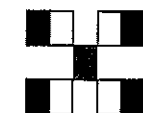
Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good				
2	2.3	Good				
3	4.9	Good				

Chain-of-Custody Record		Turn-Around Time: 5 Days	
Client: Pima Environmental	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush	
Mailing Address: 1601 N. Turner Ste 500		Project Name: EMERALD PWDU 20 4H	
Phone #: Hobbs, NM 88240	Project #: 207 38427		
email or Fax#: Chris@pimacil.com	Project Manager: Chris Jones		
QA/QC Package:			
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)		
Accreditation:	<input type="checkbox"/> Az Compliance		
<input type="checkbox"/> NELAC	<input type="checkbox"/> Other		
<input type="checkbox"/> EDD (Type)			
Sampler:		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
# of Coolers: 3			
Cooler Temp (including CF): See Remarks		(°C)	



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

email or Fax#: Chris@pinacol.com	Project Manager: chris Jones					
QA/QC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)						
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> EDD (Type) _____	Sampler: On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No # of Coolers: 3					
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/28/20	1300		S14-0-6"	GLASS	FCE	7007640
	I		S14-1'	I	I	-049
	I		S14-2'	I	I	-050
	I		S14-3"	I	I	-051
7/28/20			S11-1'			-052
7/28/20			S11-2'			-053
7/28/20			S11-3'			-054
7/28/20			S12-0-6"			-055
						-056
						per Chris
						7/29/20

Remarks:

$$\begin{aligned} 39 \pm 0 &= 3.9\% \\ 2.3 \pm 0 &= 2.3\% \\ 4.9 \pm 0 &= 4.9\% \end{aligned}$$

Bill to Devon



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

September 29, 2020

CHRIS JONES

PIMA ENVIROMENTAL

1601 N TURNER STE. 500

HOBBS, NM 88240

RE: EMERALD PWV 20 #4H

Enclosed are the results of analyses for samples received by the laboratory on 09/25/20 8:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

PIMA ENVIROMENTAL
CHRIS JONES
1601 N TURNER STE. 500
HOBBS NM, 88240
Fax To:

Received: 09/25/2020
Reported: 09/29/2020
Project Name: EMERALD PWV 20 #4H
Project Number: 32
Project Location: DEVON - EDDY CO NM

Sampling Date: 09/22/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S - 1 N COMP (H002540-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	18.0	10.0	09/28/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	19.6	10.0	09/28/2020	ND					
Surrogate: 1-Chlorooctane	123 %	44.3-144							
Surrogate: 1-Chlorooctadecane	142 %	42.2-156							

Sample ID: S - 2 N COMP (H002540-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane	121 %	44.3-144							
Surrogate: 1-Chlorooctadecane	137 %	42.2-156							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

PIMA ENVIROMENTAL
CHRIS JONES
1601 N TURNER STE. 500
HOBBS NM, 88240
Fax To:

Received: 09/25/2020
Reported: 09/29/2020
Project Name: EMERALD PWV 20 #4H
Project Number: 32
Project Location: DEVON - EDDY CO NM

Sampling Date: 09/22/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S - 3 E COMP (H002540-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane		120 %	44.3-144						
Surrogate: 1-Chlorooctadecane		136 %	42.2-156						

Sample ID: S - 4 S COMP (H002540-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane		115 %	44.3-144						
Surrogate: 1-Chlorooctadecane		130 %	42.2-156						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

PIMA ENVIROMENTAL
CHRIS JONES
1601 N TURNER STE. 500
HOBBS NM, 88240
Fax To:

Received: 09/25/2020
Reported: 09/29/2020
Project Name: EMERALD PWV 20 #4H
Project Number: 32
Project Location: DEVON - EDDY CO NM

Sampling Date: 09/22/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S - 5 S COMP (H002540-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane	118 %	44.3-144							
Surrogate: 1-Chlorooctadecane	134 %	42.2-156							

Sample ID: S - 6 W COMP (H002540-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane	117 %	44.3-144							
Surrogate: 1-Chlorooctadecane	134 %	42.2-156							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

PIMA ENVIROMENTAL
CHRIS JONES
1601 N TURNER STE. 500
HOBBS NM, 88240
Fax To:

Received: 09/25/2020
Reported: 09/29/2020
Project Name: EMERALD PWV 20 #4H
Project Number: 32
Project Location: DEVON - EDDY CO NM

Sampling Date: 09/22/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S - 7 E TEST (H002540-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	189	94.5	200	1.99	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	242	121	200	26.9	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane	120 %	44.3-144							
Surrogate: 1-Chlorooctadecane	137 %	42.2-156							

Sample ID: S - 8 W TEST (H002540-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	09/25/2020	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2020	ND	195	97.5	200	9.47	
DRO >C10-C28*	<10.0	10.0	09/25/2020	ND	185	92.6	200	13.7	
EXT DRO >C28-C36	<10.0	10.0	09/25/2020	ND					
Surrogate: 1-Chlorooctane	116 %	44.3-144							
Surrogate: 1-Chlorooctadecane	114 %	42.2-156							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

**BILL TO**

P.O. #: 26730427

Company: *Devon*

Attn: Tom Byrum

Address:

City:

State: Zip:

Phone #:

Fax #:

1

1

OR (

(G)RA

5

--	--

--	--

7

--	--

5

without

Re

100

Do

Key

1

2.

mono

ANALYSIS REQUEST

Page 7 of 7

Released to Imaging: 4/21/2021 1:41:01 PM

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 10845

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
PIMA ENVIRONMENTAL SERVICES, L	1601 N. Turner	329999	10845	C-141
Suite 500	Hobbs, NM88240			

OCD Reviewer	Condition
chensley	Application was initially rejected due to S-2 and S-5 above closure criteria /w no DTW established for 51-100 bgs. Please when submitting reports, ensure data tables and sample maps clearly depict results. S-2 and S-5 were initially rejected due to closure criteria exceeded by data table provided. If soil was excavated please ensure reports are clearly defined as how they are now reaching / exceeding closure criteria.