# Groundwater Investigation Report

April 14, 2023

## Flying M SA Unit 4" Trunkline Crude Oil and Produced Water Release

Incident No.: NOY1827137381 1RP-5214

#### **Prepared For:**

Southwest Royalties, Inc. P.O. Box 53570 Midland, Texas 79710

#### **Prepared By:**

Crain Environmental 2925 East 17<sup>th</sup> Street Odessa, Texas 79761

Cynthia K. Crain, P.G.

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#### 1.0 Introduction

Crain Environmental (CE), on behalf of Southwest Royalties, Inc. (SWR), has prepared this *Groundwater Investigation Report* for the produced water release at the Flying M SA Unit 4" Trunkline (Flying M) Site, located in Unit Letter K, Section 29, Township 9 South, Range 33 East, Lea County, New Mexico. The global positioning system (GPS) coordinates for the Release Site are 33.501508, -103.59383. The property surface rights are privately owned. The location of the Release Site is depicted on Figure 1.

#### 2.0 Background

On September 25, 2018, a split in a flow line resulted in a release of approximately 5 barrels (bbls) of crude oil and 75 bbls of produced water. Immediately following the release, the area was secured, and the flow line was repaired.

The released fluid flowed on the ground approximately 150 feet south from the release point. Approximately 4 bbls of crude oil and 56 bbl of produced water was recovered, and impacted soil was excavated and stockpiled on plastic at the Site. Land use in the Site vicinity is primarily oil and gas production activity.

The release was immediately reported to the New Mexico Oil Conservation Division (NMOCD) via telephone. The NMOCD Form C-141 (Release Notification Report) was received by the NMOCD on September 28, 2018, and the Site was assigned Incident Number NOY1827137381 and RP identifier 1RP-5214. A copy of the NMOCD Form C-141 and the NMOCD response is provided in Appendix A. Crude oil and produced water surface impacts at the Site covered approximately 4,300 square feet. The release point and the surface extent of the crude oil and produced water release are depicted on Figure 2.

On January 25, 2022, a *Remediation Report and Closure Request* was submitted to the NMOCD; however, the report was denied by the NMOCD on February 9, 2022, and a revised Closure Report was requested by April 11, 2022.

Due to delays in laboratory results, drilling permits, and equipment scheduling, a request for a 60-day extension was submitted to and approved by the NMOCD on April 4, 2022, with a new due date of June 6, 2022. Additional delays were encountered (survey scheduling, receipt of lab results, and collection of groundwater samples) and a request for an additional 60-day extension was submitted to and approved by the NMOCD on June 2, 2022, with a revised due date of August 5, 2022. Copies of NMOCD correspondence is included in Appendix B.

A revised Remediation Report, Soil Variance Request, and Groundwater Investigation (Report) was submitted to the NMOCD on August 4, 2022, that proposed re-excavation of the southern portion of the backfilled excavation and placement of a liner at a depth of four feet (') below ground surface (bgs). The Report also documented the installation of and sample collection from three monitor wells (MWs). As chloride concentrations in all three MWs (MW-1, MW-2, and MW-3) exceeded the NMOCD Criteria of 250 milligrams per liter (mg/L), SWR additionally proposed the installation of one upgradient MW.

On August 17, 2023, the NMOCD responded to the Report, stating that re-excavation of the southern portion of the backfilled excavation and placement of a liner was not required; however, the installation of two additional MWs (located NW and SE of the existing wells) was requested. On September 9, 2022, the NMOCD approved the locations of the two proposed MWs.

On December 1, 2022, CE submitted an email to the NMOCD that detailed the installation of three new MWs (MW-4, boring BH-5 [dry], and MW-6), and the laboratory results of groundwater samples from wells MW-4 and MW-6.

On December 6, 2022, the NMOCD responded with the following requests:

- Wells MW-4 and MW-6 be surveyed,
- MW-1, MW-2, and MW-3 need to be redeveloped,
- All 5 wells need to be gauged and resampled at the same time.

On January 10, 2023, SWR requested a 90-day extension to complete the activities and submit a report, and the NMOCD approved the extension until April 14, 2023.

This Groundwater Investigation Report provides details of October and November 2022, and January 2023, activities and results of groundwater monitoring.

#### 3.0 Groundwater Monitoring Results

#### 3.1 Groundwater Investigation – October and November 2022

From October 6 through October 8, 2022, Talon LPE (Talon) CE were on site to install proposed monitor wells MW-4 and MW-5, construct surface completions at wells MW-1 through MW-5, develop wells MW-4 and MW-5, re-sample wells MW-1, MW-2, and MW-3, and collect groundwater samples from the new monitor wells (MW-4 and MW-5). Based on survey data from wells MW-1, MW-2, and MW-3, the estimated groundwater flow direction was from the northwest to the southeast.

Well MW-4 was drilled to a total depth of 55' bgs at the proposed location to the southeast of MW-2 and completed with 30' of slotted screen. The well was developed, and a groundwater sample was collected for analysis of TPH, BTEX, and chloride on October 7, 2022. Depth to groundwater was recorded at 41.60' bgs

Well MW-5 was drilled to a total depth of 95' bgs (2' into the red bed) at the proposed location to the northwest of MW-3, and no moisture was encountered. The surface was covered, and the hole was allowed to remain open.

Well MW-6 was drilled to a total depth of 65' bgs approximately half was between the MW-3 and MW-6 locations. Depth to groundwater was recorded at a depth of 63.6' bgs on October 8, 2022. The water was very muddy and there was insufficient water to collect a sample.

Attempts were made to collect groundwater samples from monitor wells MW-1, MW-2, and MW-3, but the wells were silted in and unable to be gauged or sampled. Details were provided to NMOCD by phone, and it was determined that the wells did not need to be re-drilled (for sample collection) until chloride concentrations in the new wells (MW-4 and MW-5) were determined.

On October 11, 2022, CE returned to the site to check the boreholes at MW-5 and MW-6. Borehole MW-5 remained dry. Groundwater was measured in MW-6 at a depth of 62.4' bgs. Even though groundwater remained very muddy and development was not possible, a sample was collected for analysis of BTEX, TPH, and chloride.

On November 10, 2022, CE returned to the site to check the groundwater status at boreholes MW-5 and MW-6. Borehole MW-5 remained dry. Groundwater was measured in MW-6 at a depth of 57.7' bgs. After partial well development, a groundwater sample was collected from MW-6 for chloride analysis.

#### 3.2 Investigation Results – October and November 2022

- Based on initial survey data from wells MW-1, MW-2, and MW-3, the estimated groundwater flow direction was from northwest to southeast.
- The groundwater sample collected from (assumed) downgradient well MW-4 on October 7, 2022, reported BTEX and TPH concentrations below the test method detection limits, and a chloride concentration of 367 mg/L.
- The groundwater sample collected from (assumed) upgradient well MW-6 on October 11, 2022, reported BTEX and TPH concentrations below the test method detection limits, except for a detection of toluene (0.000598 mg/L). The chloride concentration was reported at 28.5 mg/L.
- The groundwater sample collected from upgradient well MW-6 on November 10, 2022, reported a chloride concentration of 1,910 mg/L.

Table 1 provides a summary of the groundwater elevation data. Table 2 provides a summary of the groundwater concentrations. Figure 2 shows the locations of the monitor wells and the October/November 2022 chloride concentrations in each well. Appendix C provides copies of the laboratory reports and chain-of-custody documentation.

#### 3.3 Groundwater Investigation – January 2023

From January 17 through January 20, and January 26 through January 27, 2023, Talon and CE were on site to re-drill monitor wells MW-1, MW-2, and MW-3, construct surface completions at wells MW-1, MW-2, MW-3, and MW-6, and re-develop monitor wells MW-1, MW-2, and MW-3. An insufficient amount of water was present in well MW-6 and development was not completed. The borehole at well MW-5 remained dry, and that boring was plugged with bentonite.

On February 20, 2023, top of casing and ground elevations were surveyed at all monitor wells (MW-1 through MW-4, and MW-6) by WTC of Andrews, Texas.

On March 13, 2023, groundwater monitoring of wells MW-1, MW-2, MW-3, MW-4, and MW-6 was conducted. Prior to sample collection, depth-to-groundwater (gauging) measurements were collected from each MW. Each well was then purged of two and a half times the well volume using dedicated disposable bailers for each well. All groundwater samples were labeled, immediately chilled in an ice chest, and transferred under chain-of-custody control to Eurofins Environment Testing (Eurofins) of Midland, Texas for analysis of chlorides. As TPH and BTEX concentrations were reported below the test method detection limits or closure criteria in previous samples, analysis was not conducted for those constituents.

Table 1 provides a summary of the groundwater elevation data. Table 2 provides a summary of the groundwater concentrations. Figure 3 shows the locations of the monitor wells and the March 2023 chloride concentrations in each well. Figure 4 provides a groundwater gradient map of the March 2023 monitoring event. Appendix C provides copies of the laboratory reports and chain-of- custody documentation. Appendix D provides copies of the boring logs.

Referring to Table 2, chloride concentrations exceeded the NMOCD Criteria in wells MW-1 (1,330 mg/L), MW-2 (2,000 mg/L), and MW-4 (273 mg/L). Referring to Figure 4, the estimated groundwater flow direction is from the southwest to the northeast. Referring to Figure 1, Lane Salt Lake is located approximately 1.9 mile southwest of the site.

#### 3.4 Investigation Results – January 2023

- Soil boring MW-5 was plugged with bentonite.
- The estimated groundwater flow direction was from southwest to northeast.
- Lane Salt Lake is located approximately 1.9 mile southwest of the site.

Flying M SA Unit 4" Trunkline Groundwater Investigation Report Chloride concentrations exceeded the NMOCD Criteria in wells MW-1 (1,330 mg/L), MW-2 (2,000 mg/L), and MW-4 (273 mg/L).

#### 4.0 Summary and Proposed Actions

Five monitor wells have been installed at the site. Groundwater samples from each well report TPH and BTEX concentrations below the test method detection limit and/or closure criteria. Chloride concentrations exceeded the closure criteria in three monitor wells (MW-1 [1,330 mg/L], MW-2 [2,000 mg/L], and MW-4 [273 mg/L].

As the estimated groundwater flow direction is from southwest to northeast, and Lane Salt Lake is located approximately 1.9 mile southwest of the Site, SWR respectfully requests that Incident # nOY1827137381 (1RP-5214) be closed. A copy of the C-141 is included in Appendix A for your approval.

#### 5.0 Distribution

Copy 1: Mike Bratcher

New Mexico Energy, Minerals, and Natural Resources Department

Oil Conservation Division, District 2

811 S. First Street

Artesia, New Mexico 88210

Copy 2: Tim Culp

Southwest Royalties, Inc.

P.O. Box 53570

Midland, Texas 79710

Copy 3: M.Y. Merchant

Southwest Royalties, Inc.

2401 Avenue O

Eunice, New Mexico 88240

**TABLES** 

## TABLE 1 SUMMARY OF GROUNDWATER ELEVATION DATA SOUTHWEST ROYALTIES, LLC FLYING M SA #2 PRODUCED WATER RELEASE NMOCD TRACKING NO.: 1RP-5214

Well ID	Date Measured	Top of Casing Elevation	Depth to Water	Groundwater Elevation
		(ft AMSL)	(ft BTOC)	(ft AMSL)
BH-1	3/29/2022	1	42.37	-
BH-1	5/19/2022	4360.10	45.67	4314.43
MW-1	6/14/2022	4360.10	46.13	4313.97
MW-1	3/13/2023	4348.71	45.99	4302.72
MW-2	5/19/2022	4360.44	46.30	4314.14
MW-2	6/14/2022	4360.44	49.58	4310.86
MW-2	1/20/2023	4349.35	46.88	4302.47
MW-2	3/13/2023	4349.35	47.08	4302.27
MW-3	5/19/2022	4362.52	48.33	4314.19
MW-3	6/14/2022	4362.52	48.40	4314.12
MW-3	3/13/2023	4350.88	48.51	4302.37
MW-4	10/7/2022	4342.29	41.60	4300.69
MW-4	1/20/2023	4342.29	41.57	4300.72
MW-4	3/13/2023	4342.29	41.73	4300.56
MW-6	10/8/2022	4351.41	63.60	4287.81
MW-6	10/11/2022	4351.41	62.40	4289.01
MW-6	11/10/2022	4351.41	57.70	4293.71
MW-6	1/20/2023	4351.41	63.31	4285.10
MW-6	3/13/2023	4351.41	61.85	4289.56

 $\ensuremath{\mathsf{bgs}}$  - Below ground surface.

---: Depth to groundwater measured prior to borehole survey.

BTOC - Below top of casing.

ft - Feet.

ID - Identification.

AMSL - Above mean sea level.

MW-1, MW-2, and MW-3 surveyed by Basin, LLC on 5/23/22

MW-1, MW-2, MW-3, MW-4, and MW-6 surveyed by WTC on  $2/20/23\,$ 

## TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS SOUTHWEST ROYALTIES, LLC FLYING M SA #2 PRODUCED WATER RELEASE NMOCD TRACKING NO.: 1RP-5214

Sample ID	Date	TPH C6 - C10 (mg/L)	TPH C10 - C28 (mg/L)	TPH C28-C36 (mg/L)	Total TPH (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Total BTEX (mg/L)	Chloride (mg/L)
NMOCD Guideline						0.01	0.75	0.75	0.62		250
BH-1/MW-1	03/29/22	< 0.885	< 0.885	< 0.854	< 0.885	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	1,220
BH-1/MW-1	06/14/22	< 0.901	< 0.901	< 0.869	< 0.901	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	1,400
MW-1	03/13/23										1,330
BH-2/MW-2	05/19/22	< 0.898	< 0.898	< 0.867	< 0.898	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	908
BH-2/MW-2	06/14/22	< 0.901	< 0.901	< 0.869	< 0.901	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	1,440
MW-2	03/13/23										2,000
BH-3/MW-3	05/19/22	< 0.901	< 0.901	< 0.869	< 0.901	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	490
BH-3/MW-3	06/14/22	< 0.898	< 0.898	< 0.867	< 0.898	< 0.00408	< 0.00367	< 0.00657	< 0.00642	< 0.00657	469
MW-3	03/13/23										207
MW-4	10/07/22	< 0.904	< 0.904	< 0.872	< 0.904	< 0.000408	< 0.000367	< 0.000657	< 0.000642	< 0.000657	367
MW-4	03/13/23										273
MW-6	10/11/22	< 0.904	< 0.904	< 0.872	< 0.904	<0.000408	0.000598	< 0.000657	< 0.000642	< 0.000657	28.5
	11/10/22										1,910
	03/13/23										234

mg/L = milligram per Liter

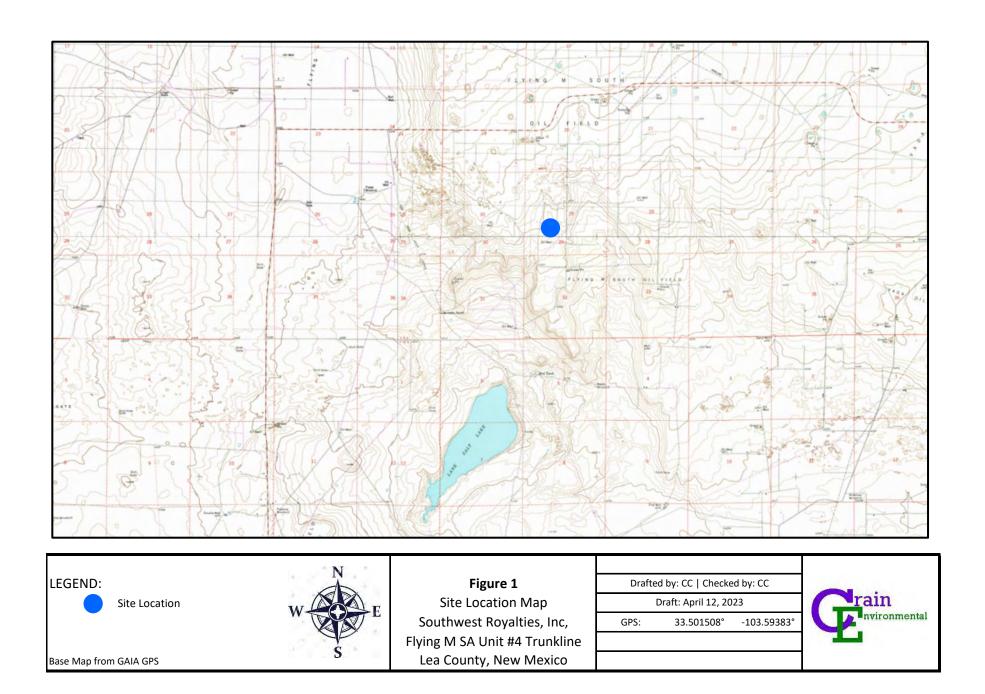
TPH = Total Petroleum Hydrocarbons by EPA Method 8015 M (Modified)

Inorganic Anions (Chlorides) by EPA Method 300

BTEX by EPA Method 8021B

**Highlighted Result Exceeds the Target Concentration** 

**FIGURES** 









Monitor Well Location with Chloride Concentration

New Monitor Well Location with Chloride Concentration

Base Map from Google Earth

### Figure 2

Chloride Concentrations (October and November 2022) Southwest Royalties, Inc, Flying M SA Unit #4 Trunkline Lea County, New Mexico Drafted by: CC | Checked by: CC

Draft: Nov. 30, 2022

GPS: 33.501508° -103.59383°









Monitor Well Location with Chloride Concentration

New Monitor Well Location with Chloride Concentration

Base Map from Google Earth

### Figure 3

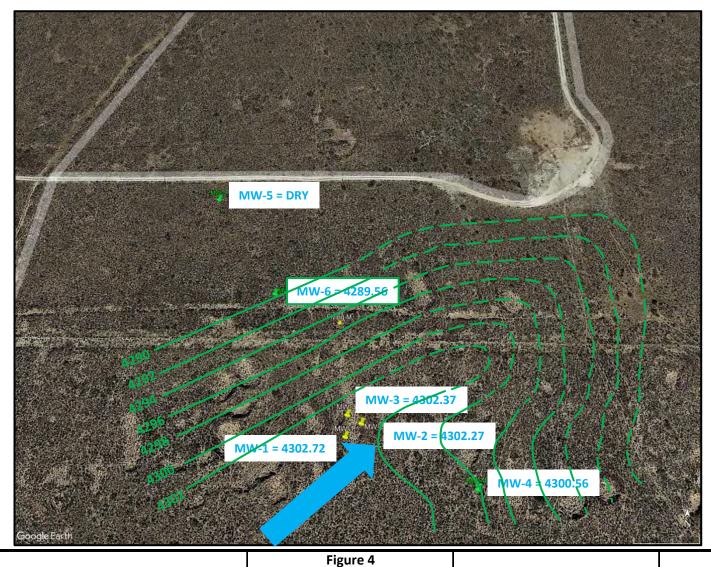
**Chloride Concentrations** March 2023 Southwest Royalties, Inc, Flying M SA Unit #4 Trunkline Lea County, New Mexico

Drafted by: CC | Checked by: CC

Draft: April 12, 2023

-103.59383 GPS: 33.501508°







Monitor Well Location with Groundwater Elevation
New Monitor Well Location with Groundwater Elevation
Groundwater Elevation Contour
Contour Interval (= 2.0 ft msl)

Estimated Direction of Groundwater Flow

Groundwater Gradient Map March 2023 Southwest Royalties, Inc, Flying M SA Unit #4 Trunkline Lea County, New Mexico Drafted by: CC | Checked by: CC

Draft: April 12, 2023

GPS: 33.501508° -103.59383°

Base Map from Google Earth



Appendix A: Release Notification and Corrective Action Form (NMOCD Form C-141)

Sistrict 1 625 N. French Dr., Hobbs, NM 88240 skrict II
1 S. First St., Artesia, NM 88210
istrict 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	NOY1827137381
District RP	1RP-5214
Facility ID	fOY1827136767
Application ID	pOY1827139495

## **HOBBS OCD**

SEP 27 2018

## **Release Notification**

## DECENTED

			Res	ponsible Pa	irty	
Responsible	Party: South	west Royalties, I	nc	OGRI	D: 21355	
Contact Nan	ne: Lindsay l	Livesay		Conta	ct Telephone: 432-20	7-3054
Contact email: llivesay@swrpermian.com					nt # (assigned by OCD)	NOY1827137381
Contact mai	ling address:	P.O. Box 53570;	Midland, TX 79	710		
			Location	n of Release	Source	
atitude: 33.	50120		Zooneio			
11111de: <u>55.</u>	30137		(NAD 83 in a	Longiu decimal degrees to 5	de: <u>-103.59389</u> decimal places)	
Site Name: F	lying M SA	Unit #2_ #4 Tru	nk Line	Site T	pe: 4" Trunk Line fro	om Battery to Injection Well
Date Release				API#	if applicable) 30-025	5-24692
Unit Letter	Section 29	Township 929S	Range 33E	_	County	Fee minerals
K	29	<b>V2</b> 53	33E	Lea		
	i. Batate	☐ Federal ☐ T	ribal 🔀 Private	(Name: Jarrod	Johnson	)
			Nature an	nd Volume	of Release	olumes provided below)
⊠ Crude Oi	Materia	al(s) Released (Select	Nature an	nd Volume	of Release	olumes provided below) ered (bbls) 5bbl 4 bbl
	Materia	National (s) Released (Select a Volume Releas	Nature an	nd Volume	of Release	
⊠ Crude Oi	Materia	Volume Released Volume Releas Volume Releas Is the concentra	Nature and attached (bbls) 5 bbl ed (bbls) 75 bb atton of dissolved	nd Volume ch calculations or sp	of Release	ered (bbls) 5bbl 4 bbl ered (bbls) 75 bbl 56 bb
⊠ Crude Oi	Materia il I Water	Volume Releas	Nature and attached (bbls) 5 bbl ed (bbls) 75 bbl atton of dissolved >>10,000 mg/l?	nd Volume ch calculations or sp	of Release  coffic justification for the v  Volume Recov	ered (bbls) 5bbl 4 bbl ered (bbls) 75 bbl 56 bb
⊠ Crude Oi ⊠ Produced	Materia il I Water ate	Volume Released (Select and Volume Released Volume Released Is the concentration produced water	Nature and all that apply and attached (bbls) 5 bbl attorn of dissolved 1>10,000 mg/l?	nd Volume ch calculations or sp	of Release  ccific justification for the v  Volume Recov  Volume Recov  I Yes No	ered (bbls) 5bbl 4 bbl ered (bbls) 75 bbl 56 bb
☑ Crude Oi ☑ Produced ☑ Condens	Materia il I Water ate	Volume Released (Select and Volume Released Volume Released Is the concentrate produced watern Volume Released (Select and Vol	Nature and all that apply and attached (bbls) 5 bbl attorn of dissolved 1>10,000 mg/l?	ch calculations or sp	Volume Recov	ered (bbls) 5bbl 4 bbl ered (bbls) 75 bbl 56 bb



## State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Released to Imaging: 1/15/2025 3:53:49 PM

	20-1				
Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?				
release as defined by 19.15.29.7(A) NMAC?	Leak of a volume greater than 25 bbl.				
• •	Leak of a volume greater than 25 oof.				
Yes □ No					
If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?				
Yes; by Merch Merchant (VP of Southwest Royalties, Inc) to Maxey Brown via phone call.					
	Initial Response				
The responsible	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury				
The source of the rele	ease has been stopped.				
The impacted area ha	s been secured to protect human health and the environment.				
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.				
All free liquids and re	ecoverable materials have been removed and managed appropriately.				
If all the actions describe	d above have not been undertaken, explain why:				
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.				
I hereby certify that the info	rmation 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 ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have				
failed to adequately investig	sate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In				
addition, OCD acceptance of and/or regulations.	of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws				
1	NER CULIP Title: PETROLEUM ENGINEER				
Printed Name: JANNER CULIP Title: PETROLEUM ENGINEER					
Signature: <u>Janua (d.)</u> Date: <u>9/26/18</u>					
amail: tancer	1p@ swrpermian.com Telephone: [432]207-3055				
oman. / orrer ee	Total Control				
OCD Only					
RECEI	Data				
Received by: By Olivio	a Yu at 10:23 am, Sep 28, 2018 Date:				

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Incident ID NOY1827137381 District RP 1RP-5214 Facility ID fOY1827136767 Application ID pOY1827139495

## **Site Assessment/Characterization**

This information must be provided to the appropriate district office no taler man 70 days after the release discovery date.				
What is the shallowest depth to groundwater beneath the area affected by the release?	48 (ft bgs)			
Did this release impact groundwater or surface water?	☐ Yes 🛛 No			
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	Yes X No			
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes X No			
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes X No			
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	Yes X No			
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes X No			
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes X No			
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes X No			
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes X No			
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes 🗓 No			
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes X No			
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes X No			
ttach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil ontamination 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.

- X Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- X 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
- X Boring or excavation logs
- X Photographs including date and GIS information
- Topographic/Aerial maps
- X 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.

Received by OCD: 1/13/2025 8:59:04 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

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Incident ID	NOY1827137381
District RP	1RP-5214
Facility ID	fOY1827136767
Application ID	pOY1827139495

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thr addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	occ does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name: Cynthia K. Crain  Signature: Cynthia K. Crain	Title: Agent for Southwest Royalties, Inc.  Date: 8/4/22
email: cindy.crain@gmail.com	Telephone: (575) 441-7244
OCD Only	
Received by:	Date:

State of New Mexico

Incident ID	NOY1827137381
District RP	1RP-5214
Facility ID	fOY1827136767
Application ID	pOY1827139495

## **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be included in the plan.		
Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)		
Deferral Requests Only: Each of the following items must be con-	firmed as part of any request for deferral of remediation.	
Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.		
X Extents of contamination must be fully delineated.		
🔀 Contamination does not cause an imminent risk to human health, the environment, or groundwater.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Printed Name: Cynthia K. Crain	Title: Agent for Southwest Royalties, Inc.	
Printed Name: Cynthia K. Crain  Signature: Cynthia K. Csain	Date: 8/4/22	
email:cindy.crain@gmail.com	Telephone:(575) 441-7244	
OCD Only		
Received by:	Date:	
☐ Approved ☐ Approved with Attached Conditions of	Approval	
Signature:	Date:	

f New Mexico

Incident ID	NOY1827137381
District RP	1RP-5214
Facility ID	fOY1827136767
Application ID	pOY1827139495

## 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: Cynthia K. Crain Title: Agent for Southwest Royalties, Inc.  Signature: Agent for Southwest Royalties, Inc.		
email: cindy.crain@gmail.com	Telephone: (575) 441-7244	
OCD Only		
Received by:	Date:	
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.		
Closure Approved by:	Date:	
Printed Name:	Title:	
<del>_</del>		

**Appendix B: NMOCD Correspondence** 



Cindy Crain <cindy.crain@gmail.com>

### The Oil Conservation Division (OCD) has approved the application, Application ID: 123608

6 messages

OCDOnline@state.nm.us < OCDOnline@state.nm.us >

Wed, Aug 17, 2022 at 2:13 PM

Page 23 of 192

To: cindy.crain@gmail.com

To whom it may concern (c/o Cindy Crain for SOUTHWEST ROYALTIES INC),

The OCD has approved the submitted Application for administrative approval of a release notification and corrective action (C-141), for incident ID (n#) nOY1827137381, with the following conditions:

Remediation Plan Approved with Conditions, OCD does approve re-excavation and installation of a liner in the southern portion of the site. OCD requests the installation of two (2) additional groundwater monitoring wells at the site. However, before you proceed with this request, we ask that you provide us with a site plan depicting the 3 wells you installed (MW-1, MW-2, and MW-3) in relation to the excavation. We would like to see a groundwater monitoring well installed at last 150 feet NW of MW-3 and another well installed about 200 ft S-SE of MW-2 in Figure 6. Before you install these two wells, we request that you email OCD a figure with the proposed locations of these two new wells. Please contact OCD for further information.

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you, Jennifer Nobui **Environmental Specialist-Advanced** 505-470-3407 Jennifer.Nobui@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive

Santa Fe, NM 87505

Cindy Crain <cindy.crain@gmail.com>

Wed, Aug 24, 2022 at 10:56 AM

To: "Nobui, Jennifer, EMNRD" <jennifer.nobui@state.nm.us>

Bcc: Tim Culp <tculp@swrpermian.com>, Mickey Cunningham <mcunningham@swrpermian.com>, mymerch@penrocoil.com

Jennifer,

Please see the OCD response below to the Remediation Plan for incident ID (n#) nOY1827137381.

As we discussed on the phone earlier today, it is my understanding that the first condition should say the OCD will not require re-excavation and installation of a liner in the southern portion of the site. If you would please confirm that my understanding is correct, I would appreciate it.

Southwest Royalties will begin preparations for the installation of 2 additional monitor wells. A revised Figure 2 with the monitor well locations shown in relation to the excavation, and a map with proposed well locations will be sent to you next week.

Please let me know if you have any questions or need any additional information in the meantime.

Thank you,

Cindy Crain

[Quoted text hidden]

Crain Environmental 2925 East 17th Street Odessa, TX 79761 (575) 441-7244

Nobui, Jennifer, EMNRD < Jennifer. Nobui@state.nm.us>

Wed, Aug 24, 2022 at 12:07 PM

To: Cindy Crain <cindy.crain@gmail.com>

Cc: "Billings, Bradford, EMNRD" < Bradford.Billings@state.nm.us>

Hello Cindy

That is correct. The error was in OCD's response. The response should have stated:

"OCD does not approve re-excavation and installation of a liner in the southern portion of the site".

Please let us know if you encounter any difficulties locating the two proposed groundwater monitoring wells at the site.

Thanks,

Jennifer Nobui

From: Cindy Crain <cindy.crain@gmail.com> Sent: Wednesday, August 24, 2022 9:56 AM

To: Nobui, Jennifer, EMNRD < Jennifer. Nobui@state.nm.us>

Subject: [EXTERNAL] Fwd: The Oil Conservation Division (OCD) has approved the application, Application ID: 123608

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

[Quoted text hidden]

Cindy Crain <cindy.crain@gmail.com>

Wed, Aug 24, 2022 at 12:19 PM

To: "Nobui, Jennifer, EMNRD" < Jennifer. Nobui@state.nm.us>

Cc: "Billings, Bradford, EMNRD" < Bradford.Billings@state.nm.us>

Thank you, Jennifer!

This statement does mean that the soil portion of the site has been closed, right?

I will be sure to let you know if any difficulties are encountered with locating the monitor wells.

Cindy Crain

[Quoted text hidden]

Received by OCD: 1/13/2025 8:59:04 PMail - The Oil Conservation Division (OCD) has approved the application, Application ID: 123608

Nobui, Jennifer, EMNRD < Jennifer. Nobui@state.nm.us>

To: Cindy Crain <cindy.crain@gmail.com>

Cc: "Billings, Bradford, EMNRD" < Bradford.Billings@state.nm.us>

Hello Cindy

The Incident nOY1827137381 cannot be closed at this time, even though it appears that impacted soil has been addressed. We need to determine if groundwater is indeed impacted by the release and if so, an Abatement Order will be opened up, and then this incident can be closed. If groundwater is determined not to have been impacted by the release, the incident would also be closed as well. Let me know if you have any questions.

[Quoted text hidden]

Cindy Crain <cindy.crain@gmail.com>

Wed, Aug 24, 2022 at 2:41 PM

Wed, Aug 24, 2022 at 2:09 PM

To: "Nobui, Jennifer, EMNRD" < Jennifer.Nobui@state.nm.us> Cc: "Billings, Bradford, EMNRD" < Bradford.Billings@state.nm.us>

Bcc: mymerch@penrocoil.com, tculp@swrpermian.com, mcunningham@swrpermian.com

Thank you, Jennifer!

I appreciate the clarification/explanation!

Cindy Crain, P.G. (575) 441-7244 cindy.crain@gmail.com [Quoted text hidden]

## Cindy Crain <cindy.crain@gmail.com>

Sep 8, 2022, 2:18 PM

to Jennifer,, Bradford,

Jennifer,

Attached please find the following:

- Revised Figure 2 (showing the monitor well locations),
- Revised Figure 6 (showing the monitor well locations), and
- Figure 7 (showing the proposed monitor well locations).

Since we previously had issues with the drilling rig getting stuck in the sand, the proposed monitor wells (MW-4 and MW-5) are located as near as possible to lease roads. Proposed MW-4 is located approximately 500 feet northwest of MW-3, and proposed MW-5 is located approximately 900 feet southeast of MW-2.

Please let me know if you have any questions, and if you approve the proposed well locations.

Thank you, Cindy Crain



## Nobui, Jennifer, EMNRD < Jennifer.Nobui@state.nm.us>

Sep 9, 2022, 9:57 AM

to me, Bradford,

#### Hello Cindy

Thank you for providing the revised figures and the site plan showing the locations of the proposed groundwater monitoring wells. OCD is ok with the location of the well proposed NW of well MW-3. However, the proposed location of the well S-SE of MW-2 is currently over 800 feet away from the release and that is too far. You will need to bring that proposed well location in closer to the release by about 500'. OCD is aware of the sinking sand conditions and we propose the drillers use plywood boards. Please let us know if you have any questions or would like to discuss these propose locations further.

Thanks.

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



## Cindy Crain <cindy.crain@gmail.com>

Sep 9, 2022, 2:12 PM

to Jennifer,, Bradford,

Jennifer,

Thank you for your response! Attached please find a figure with a revised location for proposed well MW-5. The new location is approximately 200 feet southeast of well MW-2, and should be accessible with a skid mounted drilling rig.

If the location of these 2 wells meets your approval, we will begin the NMOSE permitting process.

Sincerely, Cindy Crain

One attachment • Scanned by Gmail



Nobui, Jennifer, EMNRD < Jennifer.Nobui@state.nm.us> Sep 9, 2022,

2:23 PM

to me, Bradford,

Hello Cindy

Yes, both locations are now approved by OCD. Thank you again for all your efforts. Have a great weekend!



## Cindy Crain <cindy.crain@gmail.com>

Sep 9, 2022, 2:45 PM

to Jennifer,, Bradford,

Thank you, Jennifer -

You have a great weekend too!

Cindy Crain

## Cindy Crain <cindy.crain@gmail.com>

Dec 1, 2022, 4:16 PM

to Jennifer,, Bradford,, Tim, mymerch, Mickey, Tanner

Jennifer.

From October 6 through October 8, 2022, Talon LPE and Crain Environmental (CE) were on site to install proposed monitor wells MW-4 and MW-5, construct surface completions at wells MW-1 through MW-5, develop wells MW-4 and MW-5, re-sample wells MW-1, MW-2, and MW-3, and collect groundwater samples from the new monitor wells (MW-4 and MW-5). Details of daily activities are provided below.

#### October 6:

- MW-4 was drilled to a total depth of 55 feet (') below ground surface (bgs) at the proposed location to the southeast of MW-2, and completed with 30' of slotted screen.
- Soil samples were collected from the surface, 5' bgs, and 10' bgs for chloride analysis.
- Surface completion was constructed at MW-4.
- Attempts were made to collect groundwater samples from monitor wells MW-1, MW-2, and MW-3, but the wells were silted in and unable to be gauged or sampled. Details were provided to OCD by phone, and it was determined that the wells did not need to be re-drilled (for sample collection) until chloride concentrations in the new wells (MW-4 and MW-5) were determined.

- Drilling began at MW-5 (proposed location to the northwest of MW-3), but the air compressor went out at a depth of 15' bgs and the boring was not completed.
- Soil samples were collected at MW-5 from the surface, 5' bgs, and 10' bgs for chloride analysis.

#### October 7:

- MW-4: depth to groundwater was recorded at 41.60' bgs. The well was developed and a groundwater sample was collected for analysis of BTEX, TPH, and chloride.
- MW-5: drilling continued to a total depth of 80' bgs (2' into the redbed) and no moisture was encountered. The surface was covered, and the hole was allowed to remain open.
- Drilling began at MW-6 (halfway between MW-3 and MW-5), and continued to a total depth of 65' bgs (2' into the redbed). Some moisture was encountered.
- Soil samples were collected at MW-6 from the surface, 5' bgs, and 10' bgs for chloride analysis.

#### October 8:

- MW-5: checked borehole for the presence of groundwater. The borehole was dry.
- MW-6: checked borehole for the presence of groundwater. Groundwater was recorded at a depth of 63.6' bgs; however, the water was very muddy and there was insufficient water to collect a sample.

On October 11, 2022, CE returned to the site to check the boreholes at MW-5 and MW-6. Borehole MW-5 remained dry. Groundwater was measured in MW-6 at a depth of 62.4' bgs. Even though groundwater remained very muddy and development was not possible, a sample was collected for analysis of BTEX, TPH, and chloride.

On November 10, 2022, CE returned to the site to check the groundwater status at boreholes MW-5 and MW-6. Borehole MW-5 remained dry. Groundwater was measured in MW-6 at a depth of 57.7' bgs. After partial well development, a groundwater sample was collected from MW-6 for chloride analysis.

## Investigation Results

- Chloride concentrations in all soil samples from borings MW-4, MW-5, and MW-6 were reported below the Closure Criteria.
- The groundwater sample collected from downgradient well MW-4 on October 7, 2022 reported BTEX and TPH concentrations below the test method detection limits, and a chloride concentration of 367 mg/L.

- The groundwater sample collected from upgradient well MW-6 on October 11, 2022 reported BTEX and TPH concentrations below the test method detection limits, except for a detection of toluene (0.000598 mg/L). The chloride concentration was reported at 28.5 mg/L.
- The groundwater sample collected from upgradient well MW-6 on November 10, 2022 reported a chloride concentration of 1,910 mg/L.

The attached figure shows the locations of the monitor wells and the most recent chloride concentration in each well. The attached tables provide a summary of the soil sample results from MW-4, MW-5, and MW-6 (Table 1), and the groundwater results from wells MW-1, MW-2, MW-3, MW-4 and MW-6 (Table 2). Laboratory reports for October and November 2022 samples are attached.

#### Summary and Request for Closure

Soil concentrations in each borehole (MW-4, MW-5, and MW-6) reported chloride concentrations below the Closure Criteria. The downgradient well MW-4 reported a chloride concentration of 367 mg/L, and the upgradient well MW-6 reported a chloride concentration (1,910 mg/L). The chloride concentration in the upgradient well (MW-6) was higher than the chloride concentration reported in wells MW-1 (1,400 mg/L) and MW-2 (1,440 mg/L) on June 14, 2022, therefore, SWR respectfully requests that Incident # nOY1827137381 (1RP-5214) be closed. A copy of the C-141 is attached for your approval.

Please let me know if you have any questions or need additional information.

Thank you, Cindy Crain

7 Attachments • Scanned by Gmail

### Nobui, Jennifer, EMNRD < Jennifer.Nobui@emnrd.nm.gov>

Dec 6, 2022, 11:19 AM

to Bradford,, Michael,, me

Hello Cindy

OCD has reviewed your recent groundwater data and at this time we cannot close this case out. The groundwater gradient appears to be flowing to the northwest as opposed to the southeast, which may indicate the release onsite has impacted groundwater in this immediate region. In order to better evaluate this situation we request the following:

- Wells MW-4 and MW-6 be surveyed (you can use MW-1 as the benchmark elevation); we need groundwater elevations to determine a more accurate groundwater flow direction
- MW-1, MW-2, and MW-3 need to be redeveloped, the silt must be removed to be able to use these 3 wells in the evaluation
- All 5 wells need to be gauged an resampled at the same time

Going forward, the soil samples collected >10' from MW-4, MW-5, and MW-6 should have been analyzed. In situations where groundwater quality is in question, you need to obtain soil samples at depth, in particular from the air/water interface. Please let us know if you want to set up a call with OCD to discuss the path forward.



## Cindy Crain <cindy.crain@gmail.com>

Dec 7, 2022, 7:07 PM

to Jennifer,, Bradford,, Michael,

Hi Jennifer,

I would like to set up a call to discuss the path forward. I have availability all day Friday (12/9/22) if you are available any time that day. Please let me know what works best for you.

Thank you, Cindy Crain



## Nobui, Jennifer, EMNRD < Jennifer.Nobui@emnrd.nm.gov>

Dec 8, 2022, 10:14 AM

to me, Bradford,, Michael,

Hello Cindy

Can you make next Tuesday or Wednesday? We are not available tomorrow. Please let us know if next week will work and what time.

#### **Thanks**



## Cindy Crain <cindy.crain@gmail.com>

Dec 8, 2022, 11:09 AM

to Jennifer,, Bradford,, Michael,

Jennifer,

I can be available any time next Tuesday or Wednesday. Whatever works best for you, please just let me know.

Thank you, Cindy Crain



Nobui, Jennifer, EMNRD < Jennifer.Nobui@emnrd.nm.gov> Dec 12, 2022, 12:45 PM

to me, Bradford,, Michael,

Hi Cindy

How about tomorrow 12/13/22 at 11am MST? If that works for you can you send us an Evite so we have it on our calendars?



## Cindy Crain <cindy.crain@gmail.com>

Jan 10, 2023, 12:05 PM

to Jennifer,, Michael,, bcc: Tim, bcc: Mickey, bcc: mymerch

Good morning, Jennifer -

As I mentioned to you on the phone yesterday, drilling is scheduled for the week of January 16, 2023, at the Southwest Royalties (SWR) Flying M site. Following installation and development of monitor wells at the BH-2/MW-2 and BH-6/MW-6 locations, groundwater samples will be collected from monitor wells MW-2, MW-4, and MW-6 for chloride analysis, and top of casing and ground elevations will be surveyed by a professional surveyor.

Additionally, soil borings BH-1/MW-1, BH-3/MW-3, and BH-5 will be plugged so as to comply with the New Mexico Office of the State Engineer (NMOSE) permit.

Given the activities to be completed prior to submitting an Investigation Report, SWR respectfully requests a 90-day extension. All efforts will be made to complete activities and submit the report as soon as possible (pending subcontractor availability).

Please let me know if you have any questions, and/or if you approve the extension.

Thank you, Cindy Crain



Nobui, Jennifer, EMNRD < Jennifer.Nobui@emnrd.nm.gov> Jan 10, 2023, 12:19 PM

to Michael,, Robert,, Jocelyn,, me

Hello Cindy

OCD approves your request for a 90-day extension to 04/14/2023 to submit your report. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Please contact me if any issues come up in the field regarding the groundwater monitoring wells.



## Cindy Crain <cindy.crain@gmail.com>

Jan 10, 2023, 1:05 PM

to Jennifer,, Michael,, Robert,, Jocelyn,, bcc: Tim, bcc: Mickey, bcc: mymerch

Jennifer,

Thank you for the quick response! I will definitely let you know if any issues arise with the groundwater monitoring wells!

Sincerely, Cindy Crain



ReplyReply allForward

**Appendix C: Laboratory Analytical Reports** 



# **Environment Testing America**

# **ANALYTICAL REPORT**

Eurofins Midland 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-13092-1

Laboratory Sample Delivery Group: Lea Co. NM

Client Project/Site: Flying M SA #2

Revision: 1

For:

Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Attn: Cindy Crain

JURAMER

Authorized for release by: 4/11/2022 8:15:56 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS .....

Review your project results through



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 1/15/2025 3:53:49 PM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Crain Environmental
Project/Site: Flying M SA #2
Laboratory Job ID: 880-13092-1
SDG: Lea Co. NM

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# **Definitions/Glossary**

Client: Crain Environmental Job ID: 880-13092-1 SDG: Lea Co. NM Project/Site: Flying M SA #2

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

F1 MS and/or MSD recovery exceeds control limits. U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description** 

F1 MS and/or MSD recovery exceeds control limits. U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**General Chemistry** 

Qualifier **Qualifier Description** 

 $\overline{\mathsf{H}}$ Sample was prepped or analyzed beyond the specified holding time

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

**DER** Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DΙ

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDI Method Detection Limit Minimum Level (Dioxin) ML MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

**Practical Quantitation Limit PQL** 

**PRES** Presumptive QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

# Case Narrative

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-13092-1

SDG: Lea Co. NM

Job ID: 880-13092-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-13092-1

### Receipt

The sample was received on 3/30/2022 3:18 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.3°C

### **GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

### GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 880-13092-2

**Laboratory: Eurofins Midland** 

**Narrative** 

Job Narrative 880-13092-2

### Receipt

The sample was received on 3/30/2022 3:18 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.3°C

# **General Chemistry**

Method 2540C\_Calcd: The following sample was analyzed outside of analytical holding time due to client adding additional test without sufficient time remaining>: BH-1 (880-13092-1).

Method SM4500\_H+: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following sample has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: BH-1 (880-13092-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Eurofins Midland 4/11/2022 (Rev. 1)

Job ID: 880-13092-1 SDG: Lea Co. NM

Client: Crain Environmental Project/Site: Flying M SA #2

Client Sample ID: BH-1 Lab Sample ID: 880-13092-1 Date Collected: 03/29/22 11:10 Date Received: 03/30/22 15:18

**Matrix: Water** 

Method: 8021B - Volatile Orga Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	ma/L			03/31/22 20:54	
Toluene	< 0.000367		0.00200	0.000367	Ü			03/31/22 20:54	
Ethylbenzene	<0.000657	U	0.00200	0.000657	-			03/31/22 20:54	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629				03/31/22 20:54	1
o-Xylene	<0.000642	U	0.00200	0.000642	-			03/31/22 20:54	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	J			03/31/22 20:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130					03/31/22 20:54	
1,4-Difluorobenzene (Surr)	94		70 - 130					03/31/22 20:54	1
Method: Total BTEX - Total B	TEX Calcula	tion							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.000657	U	0.00400	0.000657	mg/L			04/01/22 15:21	
Method: 8015 NM - Diesel Rai	nge Organic	s (DRO) (0	GC)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<0.885	U	4.48	0.885	mg/L			04/05/22 10:37	
Method: 8015B NM - Diesel R	ange Organ	ics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<0.885	U	4.48	0.885	mg/L		04/04/22 14:13	04/04/22 20:58	1
Diesel Range Organics (Over C10-C28)	<0.885	U	4.48	0.885	mg/L		04/04/22 14:13	04/04/22 20:58	
Oll Range Organics (Over C28-C36)	<0.854	U	4.48	0.854	mg/L		04/04/22 14:13	04/04/22 20:58	,
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	106		70 - 130				04/04/22 14:13	04/04/22 20:58	7
1-Chlorooctane	89		70 - 130				04/04/22 14:13	04/04/22 21:40	1
o-Terphenyl	128		70 - 130				04/04/22 14:13	04/04/22 20:58	
o-Terphenyl	99		70 - 130				04/04/22 14:13	04/04/22 21:40	1
Method: 300.0 - Anions, Ion C	hromatogra	phy							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1220		10.0	0.421	mg/L			04/01/22 21:54	20
General Chemistry									
	Posult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Nesuit								
	3820	H	200	200	mg/L			04/08/22 09:55	1
Analyte Total Dissolved Solids pH	3820	H HF	200	0.01	mg/L S.U. Deg. C			04/08/22 09:55 04/08/22 09:52	1

# **Surrogate Summary**

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

Method: 8021B - Volatile Organic Compounds (GC)

**Matrix: Water Prep Type: Total/NA** 

			Perce	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-13092-1	BH-1	102	94	
880-13092-1 MS	BH-1	105	102	
880-13092-1 MSD	BH-1	99	89	
880-13097-A-7 MS	Matrix Spike	106	92	
880-13097-A-7 MSD	Matrix Spike Duplicate	110	86	
LCS 880-22736/3	Lab Control Sample	107	95	
LCS 880-22760/3	Lab Control Sample	104	93	
LCSD 880-22736/4	Lab Control Sample Dup	108	90	
LCSD 880-22760/4	Lab Control Sample Dup	104	99	
MB 880-22736/8	Method Blank	72	88	
MB 880-22760/8	Method Blank	73	88	
Surrogate Legend				
BFB = 4-Bromofluorob	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

**Matrix: Water** Prep Type: Total/NA

-			Percer	nt Surrogate Recovery (Acceptance Lin	mits)
		1CO1	OTPH1		
Lab Sample ID	Client Sample ID	(70-130)	(70-130)		
880-13092-1	BH-1	106	128		
880-13092-1	BH-1	89	99		
880-13092-1 MS	BH-1	87	94		
Surrogate Legend					
1CO = 1-Chlorooctane					

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

**Matrix: Water Prep Type: Total/NA** 

			Percent	Surrogate Recovery (Acceptance Limits)
		1CO2	OTPH2	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
LCS 880-22959/2-A	Lab Control Sample	100	117	
LCSD 880-22959/3-A	Lab Control Sample Dup	100	119	
MB 880-22959/1-A	Method Blank	103	124	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

**Eurofins Midland** 

OTPH = o-Terphenyl

Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-13092-1 SDG: Lea Co. NM

# Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-22736/8

**Matrix: Water** 

Analyte

Benzene

Toluene

o-Xylene

Surrogate

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Ethylbenzene

Xylenes, Total

**Analysis Batch: 22736** 

<b>Client Sampl</b>	e ID:	Meth	od Blank
F	rep	Type:	Total/NA

MB MB Result Qualifier RL **MDL** Unit Prepared Dil Fac D Analyzed <0.000408 U 0.00200 0.000408 mg/L 03/31/22 20:28 <0.000367 U 0.00200 0.000367 mg/L 03/31/22 20:28 <0.000657 U 0.00200 0.000657 mg/L 03/31/22 20:28 <0.000629 U 0.00400 0.000629 mg/L m-Xylene & p-Xylene 03/31/22 20:28 <0.000642 U 0.00200 0.000642 mg/L 03/31/22 20:28 <0.000642 U 0.00400 0.000642 mg/L 03/31/22 20:28

> MB MB %Recovery Qualifier Limits Prepared Dil Fac Analyzed 70 - 130 72 03/31/22 20:28 88 70 - 130 03/31/22 20:28

Lab Sample ID: LCS 880-22736/3

**Matrix: Water** 

**Analysis Batch: 22736** 

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

70 - 130

107

Spike LCS LCS %Rec Added Result Qualifier Unit %Rec Limits 0.100 0.1098 mg/L 110 70 - 130 0.100 0.1120 70 - 130 mg/L 112 0.100 0.1059 70 - 130 mg/L 106 0.200 0.2127 mg/L 106 70 - 130

mg/L

LCS LCS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 107 95 70 - 130 1,4-Difluorobenzene (Surr)

Lab Sample ID: LCSD 880-22736/4

**Client Sample ID: Lab Control Sample Dup Matrix: Water** Prep Type: Total/NA **Analysis Batch: 22736** Spike LCSD LCSD %Rec **RPD** 

0.1072

0.100

Added	Result Qualifier	Unit	D %Rec	Limits	RPD	Limit
0.100	0.1069	mg/L	107	70 - 130	3	20
0.100	0.1074	mg/L	107	70 - 130	4	20
0.100	0.09728	mg/L	97	70 - 130	8	20
0.200	0.1979	mg/L	99	70 - 130	7	20
0.100	0.1006	mg/L	101	70 - 130	6	20
	0.100 0.100 0.100 0.200	0.100 0.1069 0.100 0.1074 0.100 0.09728 0.200 0.1979	0.100     0.1069     mg/L       0.100     0.1074     mg/L       0.100     0.09728     mg/L       0.200     0.1979     mg/L	0.100         0.1069         mg/L         107           0.100         0.1074         mg/L         107           0.100         0.09728         mg/L         97           0.200         0.1979         mg/L         99	0.100     0.1069     mg/L     107     70 - 130       0.100     0.1074     mg/L     107     70 - 130       0.100     0.09728     mg/L     97     70 - 130       0.200     0.1979     mg/L     99     70 - 130	0.100     0.1069     mg/L     107     70 - 130     3       0.100     0.1074     mg/L     107     70 - 130     4       0.100     0.09728     mg/L     97     70 - 130     8       0.200     0.1979     mg/L     99     70 - 130     7

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: 880-13092-1 MS

**Matrix: Water** 

Analysis Batch: 22736

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.000408	U	0.100	0.1236		mg/L		124	70 - 130
Toluene	< 0.000367	U	0.100	0.1152		mg/L		115	70 - 130

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Client Sample ID: BH-1

Prep Type: Total/NA

# **QC Sample Results**

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

# Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-13092-1 MS

**Matrix: Water** 

**Analysis Batch: 22736** 

Client Sample ID: BH-1

Prep Type: Total/NA

Spike MS MS Sample Sample Result Qualifier Added Result Qualifier Unit D %Rec Limits Ethylbenzene <0.000657 U 0.100 0.1063 mg/L 106 70 - 130 m-Xylene & p-Xylene <0.000629 U 0.200 0.2143 mg/L 107 70 - 130 o-Xylene <0.000642 U 0.100 0.1084 108 70 - 130 mg/L

%Rec

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

**Client Sample ID: BH-1** 

**Matrix: Water** 

**Analysis Batch: 22736** 

Lab Sample ID: 880-13092-1 MSD

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.000408	U	0.100	0.1112		mg/L		111	70 - 130	11	25
Toluene	< 0.000367	U	0.100	0.1118		mg/L		112	70 - 130	3	25
Ethylbenzene	< 0.000657	U	0.100	0.1058		mg/L		106	70 - 130	0	25
m-Xylene & p-Xylene	<0.000629	U	0.200	0.2140		mg/L		107	70 - 130	0	25
o-Xylene	<0.000642	U	0.100	0.1087		mg/L		109	70 - 130	0	25

MSD MSD

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1.4-Difluorobenzene (Surr)	89	70 - 130

Lab Sample ID: MB 880-22760/8

**Matrix: Water** 

**Analysis Batch: 22760** 

Client Sample ID: Method Blank

Prep Type: Total/NA

	IVID	1410							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			04/01/22 11:49	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			04/01/22 11:49	1
Ethylbenzene	<0.000657	U	0.00200	0.000657	mg/L			04/01/22 11:49	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			04/01/22 11:49	1
o-Xylene	<0.000642	U	0.00200	0.000642	mg/L			04/01/22 11:49	1
Xylenes, Total	< 0.000642	U	0.00400	0.000642	mg/L			04/01/22 11:49	1

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		70 - 130		04/01/22 11:49	1
1,4-Difluorobenzene (Surr)	88		70 - 130		04/01/22 11:49	1

Lab Sample ID: LCS 880-22760/3

**Matrix: Water** 

**Analysis Batch: 22760** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1158		mg/L		116	70 - 130	
Toluene	0.100	0.1164		mg/L		116	70 - 130	
Ethylbenzene	0.100	0.1104		mg/L		110	70 - 130	
m-Xylene & p-Xylene	0.200	0.2236		mg/L		112	70 - 130	

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2

SDG: Lea Co. NM

# Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 880-22760/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 22760** 

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits 0.100 o-Xylene 0.1127 mg/L 113 70 - 130

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 104 70 - 130 1,4-Difluorobenzene (Surr) 93 70 - 130

Lab Sample ID: LCSD 880-22760/4 **Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 22760** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1270		mg/L		127	70 - 130	9	20
Toluene	0.100	0.1166		mg/L		117	70 - 130	0	20
Ethylbenzene	0.100	0.1100		mg/L		110	70 - 130	0	20
m-Xylene & p-Xylene	0.200	0.2222		mg/L		111	70 - 130	1	20
o-Xylene	0.100	0.1109		mg/L		111	70 - 130	2	20

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 104 70 - 130 1,4-Difluorobenzene (Surr) 99 70 - 130

Lab Sample ID: 880-13097-A-7 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 22760** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.000408	U F1	0.100	0.1325	F1	mg/L		133	70 - 130	
Toluene	< 0.000367	U	0.100	0.1214		mg/L		121	70 - 130	
Ethylbenzene	< 0.000657	U	0.100	0.1123		mg/L		112	70 - 130	
m-Xylene & p-Xylene	<0.000629	U	0.200	0.2255		mg/L		113	70 - 130	
o-Xylene	< 0.000642	U	0.100	0.1128		mg/L		113	70 - 130	

	IVIS	WS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-13097-A-7 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 22760** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.000408	U F1	0.100	0.1186		mg/L		119	70 - 130	11	25
Toluene	< 0.000367	U	0.100	0.1214		mg/L		121	70 - 130	0	25
Ethylbenzene	< 0.000657	U	0.100	0.1126		mg/L		113	70 - 130	0	25
m-Xylene & p-Xylene	<0.000629	U	0.200	0.2276		mg/L		114	70 - 130	1	25
o-Xylene	<0.000642	U	0.100	0.1149		mg/L		115	70 - 130	2	25

**Eurofins Midland** 

Released to Imaging: 1/15/2025 3:53:49 PM

Client: Crain Environmental Job ID: 880-13092-1 SDG: Lea Co. NM Project/Site: Flying M SA #2

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-13097-A-7 MSD

**Matrix: Water** 

**Analysis Batch: 22760** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

MSD MSD %Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 110 70 - 130 1,4-Difluorobenzene (Surr) 86 70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-22959/1-A

**Matrix: Water** 

**Analysis Batch: 22887** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 22959

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Gasoline Range Organics <0.904 U 4.57 0.904 mg/L 04/04/22 14:13 04/04/22 19:54 (GRO)-C6-C10 Diesel Range Organics (Over <0.904 U 4.57 0.904 mg/L 04/04/22 14:13 04/04/22 19:54 C10-C28) Oll Range Organics (Over C28-C36) 0.872 mg/L 04/04/22 14:13 04/04/22 19:54 <0.872 U 4.57 MB MB

Limits Surrogate %Recovery Qualifier 1-Chlorooctane 103 70 - 130 124 70 - 130 o-Terphenyl

Dil Fac Prepared Analyzed 04/04/22 14:13 04/04/22 19:54 04/04/22 14:13 04/04/22 19:54

Lab Sample ID: LCS 880-22959/2-A

**Matrix: Water** 

**Analysis Batch: 22887** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA Prep Batch: 22959 LCS LCS %Rec Spike

Added Result Qualifier Limits Analyte Unit D %Rec Gasoline Range Organics 91.7 78.40 mg/L 85 75 - 125 (GRO)-C6-C10 Diesel Range Organics (Over 91.7 92.94 mg/L 101 75 - 125

C10-C28)

LCS LCS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 100 o-Terphenyl 117 70 - 130

Lab Sample ID: LCSD 880-22959/3-A

**Matrix: Water** 

**Analysis Batch: 22887** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 22959

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline Range Organics 92.0 78.52 mg/L 85 75 - 125 0 20 (GRO)-C6-C10 Diesel Range Organics (Over 92.0 90.85 99 75 - 125 2 20 mg/L

C10-C28)

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 100 70 - 130 o-Terphenyl 119 70 - 130

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2

SDG: Lea Co. NM

# Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-13092-1 MS Client Sample ID: BH-1

**Matrix: Water** 

**Analysis Batch: 22887** 

Prep Type: Total/NA Prep Batch: 22959

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	79.7	F1	89.3	79.46	F1	mg/L		-0.2	75 - 125	
Diesel Range Organics (Over C10-C28)	69.1	F1	89.3	66.52	F1	mg/L		-3	75 - 125	

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 87 70 - 130 o-Terphenyl 94

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-22725/3 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 22725** 

MB MB

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 0.500 0.0210 mg/L 03/31/22 22:07 Chloride <0.0210 U

Lab Sample ID: LCS 880-22725/4 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 22725** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	25.0	24.34		mg/L		97	90 - 110	

Lab Sample ID: LCSD 880-22725/5 **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 22725** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	25.0	23.90		mg/L		96	90 - 110	2	20	

Lab Sample ID: 880-13085-A-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 22725** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	2.78		25.0	28.02		ma/L		101	90 - 110	

Lab Sample ID: 880-13085-A-1 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 22725

Allalysis Datcil. 22125											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	2.78		25.0	27.58		mg/L		99	90 - 110	2	20

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2

SDG: Lea Co. NM

Prep Type: Total/NA

Client Sample ID: Method Blank

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-23205/1

**Matrix: Water** 

**Analysis Batch: 23205** 

MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte **Prepared** Total Dissolved Solids 25.0 25.0 mg/L 04/08/22 09:55 <25.0 U

Lab Sample ID: LCS 880-23205/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 23205** 

Spike LCS LCS %Rec Analyte Added Result Qualifier D %Rec Limits Unit 1000 989.0 80 - 120 **Total Dissolved Solids** mg/L 99

Lab Sample ID: LCSD 880-23205/3 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 23205** 

Spike LCSD LCSD %Rec **RPD** RPD Added Result Qualifier Limits Analyte Unit %Rec Limit Total Dissolved Solids 1000 1005 101 80 - 120 mg/L

Lab Sample ID: 880-13092-1 DU Client Sample ID: BH-1 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 23205** 

DU DU **RPD** Sample Sample Analyte Result Qualifier Result Qualifier Unit **RPD** Limit Total Dissolved Solids 3820 H 3664 mg/L 10

Method: SM 4500 H+ B - pH

Lab Sample ID: 880-13092-1 DU Client Sample ID: BH-1 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 23203** 

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
рН	7.3	HF	 7.3		S.U.		 0.3	10
Temperature	23.2	HF	23.4		Deg. C		0.9	10

# **QC Association Summary**

Job ID: 880-13092-1 Client: Crain Environmental Project/Site: Flying M SA #2 SDG: Lea Co. NM

**GC VOA** 

**Analysis Batch: 22736** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13092-1	BH-1	Total/NA	Water	8021B	
MB 880-22736/8	Method Blank	Total/NA	Water	8021B	
LCS 880-22736/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-22736/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-13092-1 MS	BH-1	Total/NA	Water	8021B	
880-13092-1 MSD	BH-1	Total/NA	Water	8021B	

**Analysis Batch: 22760** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-22760/8	Method Blank	Total/NA	Water	8021B	
LCS 880-22760/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-22760/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-13097-A-7 MS	Matrix Spike	Total/NA	Water	8021B	
880-13097-A-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

**Analysis Batch: 22836** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13092-1	BH-1	Total/NA	Water	Total BTEX	

**GC Semi VOA** 

**Analysis Batch: 22887** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13092-1	BH-1	Total/NA	Water	8015B NM	22959
880-13092-1	BH-1	Total/NA	Water	8015B NM	22959
MB 880-22959/1-A	Method Blank	Total/NA	Water	8015B NM	22959
LCS 880-22959/2-A	Lab Control Sample	Total/NA	Water	8015B NM	22959
LCSD 880-22959/3-A	Lab Control Sample Dup	Total/NA	Water	8015B NM	22959
880-13092-1 MS	BH-1	Total/NA	Water	8015B NM	22959

Prep Batch: 22959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Ba
880-13092-1	BH-1	Total/NA	Water	8015NM Aq Prep
880-13092-1	BH-1	Total/NA	Water	8015NM Aq Prep
MB 880-22959/1-A	Method Blank	Total/NA	Water	8015NM Aq Prep
LCS 880-22959/2-A	Lab Control Sample	Total/NA	Water	8015NM Aq Prep
LCSD 880-22959/3-A	Lab Control Sample Dup	Total/NA	Water	8015NM Aq Prep
880-13092-1 MS	BH-1	Total/NA	Water	8015NM Aq Prep

**Analysis Batch: 23015** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13092-1	BH-1	Total/NA	Water	8015 NM	

**HPLC/IC** 

**Analysis Batch: 22725** 

<b>Lab Sample ID</b> 880-13092-1	Client Sample ID BH-1	Prep Type Total/NA	Matrix Water	Method 300.0	Prep Batch
MB 880-22725/3	Method Blank	Total/NA	Water	300.0	
LCS 880-22725/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-22725/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-13085-A-1 MS	Matrix Spike	Total/NA	Water	300.0	

**Eurofins Midland** 

Page 13 of 20

# **QC Association Summary**

Client: Crain Environmental
Project/Site: Flying M SA #2
Job ID: 880-13092-1
SDG: Lea Co. NM

enting of A

# HPLC/IC (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13085-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

# **General Chemistry**

# **Analysis Batch: 23203**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13092-1	BH-1	Total/NA	Water	SM 4500 H+ B	
880-13092-1 DU	BH-1	Total/NA	Water	SM 4500 H+ B	

# **Analysis Batch: 23205**

<b>Lab Sample ID</b> 880-13092-1	Client Sample ID BH-1	Prep Type Total/NA	Matrix Water	Method SM 2540C	Prep Batch
MB 880-23205/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-23205/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-23205/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-13092-1 DU	BH-1	Total/NA	Water	SM 2540C	

# **Lab Chronicle**

Client: Crain Environmental
Project/Site: Flying M SA #2
Job ID: 880-13092-1
SDG: Lea Co. NM

Client Sample ID: BH-1

Lab Sample ID: 880-13092-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	22736	03/31/22 20:54	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			22836	04/01/22 15:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23015	04/05/22 10:37	AJ	XEN MID
Total/NA	Prep	8015NM Aq Prep			33.5 mL	3 mL	22959	04/04/22 14:13	DM	XEN MID
Total/NA	Analysis	8015B NM		1			22887	04/04/22 20:58	AJ	XEN MID
Total/NA	Prep	8015NM Aq Prep			33.8 mL	3 mL	22959	04/04/22 14:13	DM	XEN MID
Total/NA	Analysis	8015B NM		1			22887	04/04/22 21:40	AJ	XEN MID
Total/NA	Analysis	300.0		20			22725	04/01/22 21:54	CH	XEN MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	23205	04/08/22 09:55	SC	XEN MID
Total/NA	Analysis	SM 4500 H+ B		1			23203	04/08/22 09:52	SC	XEN MID

# **Laboratory References:**

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

**Eurofins Midland** 

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# **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-13092-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

# **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority		Program	Identification Number	Expiration Date
Texas		NELAP	T104704400-21-22	06-30-22
The following analytes the agency does not do		eport, but the laboratory is r	not certified by the governing authority.	This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	
300.0		Water	Chloride	
8015 NM		Water	Total TPH	
SM 2540C		Water	Total Dissolved Solids	
SM 4500 H+ B		Water	Temperature	
Total BTEX		Water	Total BTEX	

# **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-13092-1 SDG: Lea Co. NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	XEN MID
SM 4500 H+ B	pH	SM	XEN MID
5030B	Purge and Trap	SW846	XEN MID
8015NM Aq Prep	Microextraction	SW846	XEN MID

### **Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

### **Laboratory References:**

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-13092-1

SDG: Lea Co. NM

Lab Sample ID Client Sample ID Matrix Collected Received 880-13092-1 BH-1 Water 03/29/22 11:10 03/30/22 15:18

# **Curofins** The connect of the connection of the connection

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State of Project: Program:

UST/PST PRP Brownfields

RRC

Superfund [

Bill to: (if different) Company Name:

Casa

# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

	Work Order No:
<del>-</del>	13092
	•

www.xenco.com

**Work Order Comments** 

Revised Date: 08/25/2020 Rev. 2020.2	R				F					
				200						5
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Date/Time	Received by (Signature)	ure) Rec	Relinquished by (Signature)	Date/Time		re)	Received by: (Signature)	Rece	(Asignature)	Relipquished by (Signature)
		ns and conditions yond the control ss previously negotiated.	of service. Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	ns kenco, its amiliates and state incurred by the client if su rofins Xenco, but not analyz	es or expense mitted to Eu	onsibility for any losse for each sample sub	shall not assume any response t and a charge of \$	ost of samples and : be applied to each I	will be liable only for the co rum charge of \$85.00 will t	of service. Eurofins Xenco of Eurofins Xenco. A minir
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V Zn	Ag SıO <sub>2</sub> Na Sr Tl Sn t	Mn Mo Ni K S	Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se	As Ba Be B Cd Ca	Al Sb		8RCRA 13P	020: bo analyzad	10 200.8 / 6020:	Total 200.7 / 6010
	880-13092 Chain of Custody	880-1309							The state of the s	
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				X	e		3/29/22 1110	SW 3/2		BH-1
Sample Comments	San			B	Cont	Depth Comp	oled Sampled	Matrix Sampled	tification	Sample Identification
NaOH+Ascorbic Acid SAPC	NaOH+As			PH TE bler	4—		d Temp	Corre		Total Containers:
Zn Acetate+NaOH Zn	Zn Acetat			χ	<u> </u>	2	Temperature Reading	N/A Temp	Yes No	Sample Custody Seals:
NaSO 3	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub>			0). 25	Pa	.1	Correction Factor	(NA)   Corre	Yes No	Cooler Custody Seals:
NABIS	NaHSO 4 NABIS			<u>5</u> /	ram	of the	Thermometer ID	<u> </u>	( Yes) I	Samples Received Intact:
	H <sub>3</sub> PO <sub>4</sub> HP			4	eters	Yes No	(No Wet Ice	ank: Yes No	Temp Blank:	SAMPLE RECEIPT
	H <sub>2</sub> SO <sub>4</sub> H <sub>2</sub>				L	the lab, if received by 4:30pm	the lab, if re			PO#
	HCL. HC					TAT starts the day received by	TAT starts th	Sain		Sampler's Name:
	Cool Cool				L	4/7/22	Due Date	MM	Lea Con	Project Location.
DI Water: H <sub>2</sub> O	None NO	-	-		Pres.	Rush	<b>⊠</b> Routine		1.	Project Number
Preservative Codes	Pres	JEST	ANALYSIS REQU	Ţ		Turn Around		5A #	Flying N SA # 2	Project Name:
Other-	EDD ADaPT	Deliverables.	200	<u>Crain @ Amail. com</u>	Crain	. Lindy.	Email.	11-7244	1 (575) 44)- 7244	Phone:
TRRP Level IV	!     Level    PST/UST   TRRP	Reporting Level II	TX 79710	Midland.		City, State ZIP	761	TX 79761	Questa,	City, State ZIP
	Z	State of Project:	3570	P.O. Box 53570		Address.	¥.	17 4	3435 C. 11	Address:

# **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-13092-1 SDG Number: Lea Co. NM

Login Number: 13092 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

4/11/2022 (Rev. 1)

**Environment Testing America** 

# **ANALYTICAL REPORT**

**Eurofins Midland** 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-15046-1

Laboratory Sample Delivery Group: Lea Co. NM

Client Project/Site: Flying M SA #2

Revision: 1

For:

Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Attn: Cindy Crain

RAMER

Authorized for release by: 6/2/2022 8:56:05 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Crain Environmental
Project/Site: Flying M SA #2

Laboratory Job ID: 880-15046-1 SDG: Lea Co. NM

# **Table of Contents**

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# **Definitions/Glossary**

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

# **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

# **GC Semi VOA**

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased. U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

# **Glossary**

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

**DER** Duplicate Error Ratio (normalized absolute difference)

**Dilution Factor** Dil Fac

Detection Limit (DoD/DOE) DΙ

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL **Practical Quantitation Limit** 

Presumptive **PRES** QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

# Case Narrative

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-15046-1

SDG: Lea Co. NM

Job ID: 880-15046-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-15046-1

### REVISION

The report being provided is a revision of the original report sent on 5/31/2022. The report (revision 1) is being revised due to BTEX parameters missing on final report.

Report revision history

## Receipt

The samples were received on 5/23/2022 12:04 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

### **GC VOA**

Method Total\_BTEX\_GCV: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-26211 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

### GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Job ID: 880-15046-1

Client: Crain Environmental Project/Site: Flying M SA #2 SDG: Lea Co. NM

Lab Sample ID: 880-15046-1

Date Collected: 05/19/22 10:00 Date Received: 05/23/22 12:04

Client Sample ID: MW-2

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			05/25/22 23:51	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			05/25/22 23:51	1
Ethylbenzene	< 0.000657	U	0.00200	0.000657	mg/L			05/25/22 23:51	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			05/25/22 23:51	1
o-Xylene	< 0.000642	U	0.00200	0.000642	mg/L			05/25/22 23:51	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			05/25/22 23:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130					05/25/22 23:51	1
1,4-Difluorobenzene (Surr)	92		70 - 130					05/25/22 23:51	1

**Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Total BTEX <0.000657 U 0.00400 0.000657 mg/L 05/31/22 12:57

Method: 8015 NM - Diesel Range Organics (DRO) (GC) Result Qualifier Analyte RL **MDL** Unit D Prepared Analyzed Dil Fac Total TPH <0.898 U 05/27/22 12:03 4.55 0.898 mg/L

Method: 8015B NM - Diesel Range Organics (DRO) (GC) Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac <0.898 U 0.898 mg/L Gasoline Range Organics 4.55 05/26/22 14:03 05/26/22 17:39 (GRO)-C6-C10 Diesel Range Organics (Over <0.898 U 4.55 0.898 mg/L 05/26/22 14:03 05/26/22 17:39 C10-C28) Oll Range Organics (Over C28-C36) <0.867 U 4.55 0.867 mg/L 05/26/22 14:03 05/26/22 17:39 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 111 70 - 130 05/26/22 14:03 05/26/22 17:39 122 70 - 130 05/26/22 14:03 05/26/22 17:39 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 25.0 Chloride 908 1.05 mg/L 05/25/22 22:40

Client Sample ID: MW-3 Lab Sample ID: 880-15046-2 Date Collected: 05/19/22 10:50 **Matrix: Water** 

Date Received: 05/23/22 12:04

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			05/25/22 23:31	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			05/25/22 23:31	1
Ethylbenzene	< 0.000657	U	0.00200	0.000657	mg/L			05/25/22 23:31	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			05/25/22 23:31	1
o-Xylene	<0.000642	U	0.00200	0.000642	mg/L			05/25/22 23:31	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			05/25/22 23:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130			· ·		05/25/22 23:31	1
1,4-Difluorobenzene (Surr)	94		70 - 130					05/25/22 23:31	1

# **Client Sample Results**

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

**Client Sample ID: MW-3** Lab Sample ID: 880-15046-2 Date Collected: 05/19/22 10:50

**Matrix: Water** 

Date Received: 05/23/22 12:04

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00200	0.00100	mg/L			05/25/22 23:31	1
- Method: 8015 NM - Diesel Rar	nge Organic	s (DRO) (0	SC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<0.901	U	4.56	0.901	mg/L			05/27/22 12:03	1
Method: 8015B NM - Diesel Ra	ange Organ	ics (DRO)	(GC)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<0.901	U	4.56	0.901	mg/L		05/26/22 14:03	05/26/22 18:01	1
(GRO)-C6-C10									
Diesel Range Organics (Over	< 0.901	U	4.56	0.901	mg/L		05/26/22 14:03	05/26/22 18:01	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<0.869	U	4.56	0.869	mg/L		05/26/22 14:03	05/26/22 18:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	127		70 - 130				05/26/22 14:03	05/26/22 18:01	1
o-Terphenyl	135	S1+	70 - 130				05/26/22 14:03	05/26/22 18:01	1
Method: 300.0 - Anions, Ion C	hromatogra	phy							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490		10.0	0.421	mg/L			05/25/22 22:49	20

# **Surrogate Summary**

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

Method: 8021B - Volatile Organic Compounds (GC)

**Matrix: Water** Prep Type: Total/NA

_			Percent	t Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)	
880-15046-1	MW-2	122	92	
880-15046-2	MW-3	123	94	
Surrogate Legend				

BFB = 4-Bromofluorobenzene (Surr) DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

**Matrix: Water** Prep Type: Total/NA

			Percent	Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-15046-1	MW-2	111	122	
880-15046-2	MW-3	127	135 S1+	
880-15197-B-1-B MS	Matrix Spike	88	85	
880-15197-B-1-C MSD	Matrix Spike Duplicate	88	85	
LCS 880-26369/2-A	Lab Control Sample	104	102	
LCSD 880-26369/3-A	Lab Control Sample Dup	108	105	
MB 880-26369/1-A	Method Blank	109	115	

**Surrogate Legend** 

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Dil Fac

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

**Method: Total BTEX - Total BTEX Calculation** 

Lab Sample ID: MB 880-26190/5-A

**Matrix: Water** 

Analyte

Total BTEX

**Analysis Batch: 26211** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26369

Analyzed

Prep Batch: 26190

05/24/22 14:35 05/25/22 12:32

**Prepared** 

Lab Sample ID: MB 880-26211/39 **Client Sample ID: Method Blank** Prep Type: Total/NA

0.00200

RL

**MDL** Unit

0.00100 mg/L

**Matrix: Water** 

**Analysis Batch: 26211** 

MB MB

MB MB Result Qualifier

<0.00100 U

Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Analyte Total BTEX <0.00100 U 0.00200 05/25/22 23:09 0.00100 mg/L

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-26369/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 26295** 

MB MB Result Qualifier RL **MDL** Unit Analyzed Dil Fac **Analyte** Prepared 05/26/22 09:03 05/26/22 10:44 Gasoline Range Organics <0.904 U 4.57 0.904 mg/L (GRO)-C6-C10 Diesel Range Organics (Over <0.904 U 4.57 0.904 mg/L 05/26/22 09:03 05/26/22 10:44 C10-C28) Oll Range Organics (Over C28-C36) <0.872 U 4.57 0.872 mg/L 05/26/22 09:03 05/26/22 10:44

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130	05/26/22 09:03	05/26/22 10:44	1
o-Terphenyl	115		70 - 130	05/26/22 09:03	05/26/22 10:44	1

Lab Sample ID: LCS 880-26369/2-A **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 26295** 

Prep Batch: 26369 Spike LCS LCS %Rec Added Result Qualifier Unit D %Rec Limits Analyte 91.7 79.04 86 75 - 125 Gasoline Range Organics mg/L (GRO)-C6-C10 Diesel Range Organics (Over 91.7 72.59 79 75 - 125 mg/L C10-C28)

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 104 70 - 130 o-Terphenyl 102 70 - 130

Lab Sample ID: LCSD 880-26369/3-A

Matrix: Water							Prep Ty	pe: Tot	al/NA
Analysis Batch: 26295							Prep E	Batch: 2	26369
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	92.0	82.66		mg/L		90	75 - 125	4	20
(GRO)-C6-C10									
Diesel Range Organics (Over	92.0	76.31		mg/L		83	75 - 125	5	20
C10-C28)									

Client Sample ID: Lab Control Sample Dup

Client: Crain Environmental Job ID: 880-15046-1 SDG: Lea Co. NM Project/Site: Flying M SA #2

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 880-26369/3-A

**Matrix: Water** 

**Analysis Batch: 26295** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26369

LCSD LCSD

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 108 70 - 130 o-Terphenyl 105 70 - 130

Client Sample ID: Matrix Spike Lab Sample ID: 880-15197-B-1-B MS

**Analysis Batch: 26295** 

**Matrix: Water** 

**Prep Type: Total/NA** Prep Batch: 26369

%Rec MS MS Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <0.893 U 89.6 91.62 mg/L 102 75 - 125 (GRO)-C6-C10 Diesel Range Organics (Over <0.893 U 89.6 83.08 mg/L 93 75 - 125 C10-C28)

MS MS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 88 70 - 130 70 - 130 o-Terphenyl 85

Lab Sample ID: 880-15197-B-1-C MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** 

**Analysis Batch: 26295** 

**Prep Type: Total/NA** 

Prep Batch: 26369

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit D %Rec <0.893 U Gasoline Range Organics 89.6 93.27 mg/L 104 75 - 125 2 20 (GRO)-C6-C10 89.6 Diesel Range Organics (Over <0.893 U 83.29 mg/L 93 75 - 125 0 20

C10-C28)

MSD MSD

MB MB

Surrogate	%Recovery 0	Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	85		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-26254/3 Client Sample ID: Method Blank **Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 26254** 

Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed 0.500 Chloride <0.0210 U 0.0210 mg/L 05/25/22 19:32

Lab Sample ID: LCS 880-26254/4 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 26254** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloride 25.0 24.46 98 mg/L 90 - 110

# **QC Sample Results**

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-26254/5 **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA

Analysis Batch: 26254

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	25.0	25.04		mg/L		100	90 - 110	2	20	

Lab Sample ID: 880-15135-A-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 26254** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	9.41		25.0	34.99		mg/L		102	90 - 110	 

Lab Sample ID: 880-15135-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 26254** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	9.41		25.0	33.37		mg/L		96	90 - 110	5	20

# **QC Association Summary**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-15046-1

SDG: Lea Co. NM

**GC VOA** 

Prep Batch: 26190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-26190/5-A	Method Blank	Total/NA	Water	5035	

**Analysis Batch: 26211** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15046-1	MW-2	Total/NA	Water	8021B	
880-15046-2	MW-3	Total/NA	Water	8021B	
880-15046-2	MW-3	Total/NA	Water	Total BTEX	
MB 880-26190/5-A	Method Blank	Total/NA	Water	Total BTEX	26190
MB 880-26211/39	Method Blank	Total/NA	Water	Total BTEX	
LCS 880-26211/34	Lab Control Sample	Total/NA	Water	Total BTEX	
LCSD 880-26211/35	Lab Control Sample Dup	Total/NA	Water	Total BTEX	
880-15046-2 MS	MW-3	Total/NA	Water	Total BTEX	
880-15046-2 MSD	MW-3	Total/NA	Water	Total BTEX	

**Analysis Batch: 26584** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15046-1	MW-2	Total/NA	Water	Total BTEX	

# **GC Semi VOA**

# **Analysis Batch: 26295**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15046-1	MW-2	Total/NA	Water	8015B NM	26369
880-15046-2	MW-3	Total/NA	Water	8015B NM	26369
MB 880-26369/1-A	Method Blank	Total/NA	Water	8015B NM	26369
LCS 880-26369/2-A	Lab Control Sample	Total/NA	Water	8015B NM	26369
LCSD 880-26369/3-A	Lab Control Sample Dup	Total/NA	Water	8015B NM	26369
880-15197-B-1-B MS	Matrix Spike	Total/NA	Water	8015B NM	26369
880-15197-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	8015B NM	26369

# Prep Batch: 26369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15046-1	MW-2	Total/NA	Water	8015NM Aq Prep	
880-15046-2	MW-3	Total/NA	Water	8015NM Aq Prep	
MB 880-26369/1-A	Method Blank	Total/NA	Water	8015NM Aq Prep	
LCS 880-26369/2-A	Lab Control Sample	Total/NA	Water	8015NM Aq Prep	
LCSD 880-26369/3-A	Lab Control Sample Dup	Total/NA	Water	8015NM Aq Prep	
880-15197-B-1-B MS	Matrix Spike	Total/NA	Water	8015NM Aq Prep	
880-15197-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	8015NM Aq Prep	

# **Analysis Batch: 26439**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15046-1	MW-2	Total/NA	Water	8015 NM	
880-15046-2	MW-3	Total/NA	Water	8015 NM	

# HPLC/IC

# **Analysis Batch: 26254**

Lab Sample ID 880-15046-1	Client Sample ID MW-2	Prep Type Total/NA	Matrix Water	Method 300.0	Prep Batch
880-15046-2	MW-3	Total/NA	Water	300.0	
MB 880-26254/3	Method Blank	Total/NA	Water	300.0	

**Eurofins Midland** 

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# **QC Association Summary**

Client: Crain Environmental
Project/Site: Flying M SA #2
Job ID: 880-15046-1
SDG: Lea Co. NM

# **HPLC/IC (Continued)**

# **Analysis Batch: 26254 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-26254/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-26254/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-15135-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-15135-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

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Job ID: 880-15046-1 SDG: Lea Co. NM

Project/Site: Flying M SA #2

Client Sample ID: MW-2

Client: Crain Environmental

Lab Sample ID: 880-15046-1

Matrix: Water

Date Collected: 05/19/22 10:00 Date Received: 05/23/22 12:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1			26211	05/25/22 23:51	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26584	05/31/22 12:57	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26439	05/27/22 12:03	AJ	XEN MID
Total/NA	Prep	8015NM Aq Prep			33 mL	3 mL	26369	05/26/22 14:03	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26295	05/26/22 17:39	SM	XEN MID
Total/NA	Analysis	300.0		50			26254	05/25/22 22:40	CH	XEN MID

Client Sample ID: MW-3

Date Collected: 05/19/22 10:50

Lab Sample ID: 880-15046-2

Matrix: Water

Date Received: 05/23/22 12:04

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B	-	1			26211	05/25/22 23:31	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26211	05/25/22 23:31	MR	XEN MID
Total/NA	Analysis	8015 NM		1			26439	05/27/22 12:03	AJ	XEN MID
Total/NA	Prep	8015NM Aq Prep			32.9 mL	3 mL	26369	05/26/22 14:03	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26295	05/26/22 18:01	SM	XEN MID
Total/NA	Analysis	300.0		20			26254	05/25/22 22:49	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

**Eurofins Midland** 

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# **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-15046-1 Project/Site: Flying M SA #2 SDG: Lea Co. NM

# **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

<b>Authority</b> Texas		Program	Identification Number	Expiration Date	
		NELAP	T104704400-21-22	06-30-22	
The following analytes the agency does not do		eport, but the laboratory is r	not certified by the governing authority.	This list may include analytes for which	
Analysis Method	Prep Method	Matrix	Analyte		
			, and yes		
300.0		Water	Chloride		
300.0 8015 NM	·	Water Water			

# **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-15046-1 SDG: Lea Co. NM

/lethod	Method Description	Protocol	Laboratory	
3021B	Volatile Organic Compounds (GC)	SW846	XEN MID	
otal BTEX	Total BTEX Calculation	TAL SOP	XEN MID	
015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID	
015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID	
00.0	Anions, Ion Chromatography	MCAWW	XEN MID	
030B	Purge and Trap	SW846	XEN MID	
015NM Aq Prep	Microextraction	SW846	XEN MID	

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### **Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates. TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

# **Laboratory References:**

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-15046-1

SDG: Lea Co. NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-15046-1	MW-2	Water	05/19/22 10:00	05/23/22 12:04
880-15046-2	MW-3	Water	05/19/22 10:50	05/23/22 12:04

¿ eurofins

Xenco

mvionnent esting

City, State ZIP Address:

2925 E.

79761

City, State ZIP

Midland TX

Reporting Level II Level III

PST/UST | TRRP |

Level IV

avironmental 1770

Bill to. (if different)

Company Name.

Project Manager Company Name.

# Chain of Custody

Houston, TX (281) 240-4200, Midland, TX (432) 704-5440 Sa EL Paso, TX (915) 585-3443 L Hobbs, NM (575) 392-7550 C

(201) 270-7200, Dallas IA (214) 302-0300	す了
2) 704-5440 San Antonio, TX (210) 509-3334	Work Order No:
15) 585-3443 Lubbock, TX (806) 794-1296	i
75) 392-7550 Carlsbad NM (575) 988-3199	~~
	www.xenco.com Page / of /
Leasa Hale	Work Order Comments
Southwest Royalties	Program: UST/PST PRP Brownfields RRC Superfund
P.O. Box 53570	State of Project: NM

<b>5</b>	8RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se TCLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U  sa valid purchase order from client company to Eurofine Xenco. Its affiliates and subcontractors. It assures chardward from client company to Eurofine Xenco. Its affiliates and subcontractors. It assures chardward from client company to Eurofine Xenco. Its affiliates and subcontractors. It assures chardward from client company to Eurofine Xenco. Its affiliates and subcontractors.			880-15046 Chain of Custody		5/19/22 1000 6 XX	Date Time Grab/ # of The Sampled Sampled Comp Cont The Co	Corrected Temperature: U. 2 H S Jan.	ding 4.4	Par	eter ID amer		TAT starts the day received by the lab, if received by 4.30pm	Due Date:   5/27/22	X Routine □ Rush	Flying M SA # 2 Turn Around ANALYSIS REQUEST	Email Cindy. Crain @ gmail. com Deliverables. E
Received by (Signature)  Date/Time	e Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg 1631 / 245 1 / 7470 / 7471					1 4 Jan rush o	Sample Comment	NaOH+Ascorbic Acid SAP	Zn Acetate+NaOH Zn	Na <sub>2</sub> S <sub>2</sub> O <sub>2</sub> NaSO <sub>3</sub>	H <sub>3</sub> PO <sub>4</sub> HP			Cool Cool MeOH		Preservative Code	EDD ADaPT Other
	Nated.  Received by (Signature)	Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V ;  Hg 1631/2451/7470/747  Matted.	Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V ; Hg 1631/2451/7470/747  Matted.	Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V : Hg 1631 / 245 1 / 7470 / 747   Received by: //signature)	dy	dy  NI K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U Hg 1631 / 245 1 / 7470 /  Received by (Signature)	dy 4 May 1  1	dy  Wi K Se Ag SiO <sub>2</sub> Na Sr Tl Sn L Hg 1631 / 245 1 / 7470 /  Received by (Signature)	Sar  Sar  MaOH+A  MaOH+A  Au  Mall  Mall	Say  William William WaoH+A  Say  William William WaoH+A  Say  William William WaoH+A  Say  Say  Say  Say  Say  Say  Say  Sa	Sat	Sat Sate of the Kingsture)  Received by Kingsture)  Received by Kingsture)	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> HP NaHSO 4 NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO 3 Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Con Sample Con H <sub>2</sub> SO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>3</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>4</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>5</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>6</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>7</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>8</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>9</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>9</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>9</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn H <sub>9</sub> SIO <sub>2</sub> Na Sr TI Sn U V Zn	H2. HCL. HC H250 4. H H3PO 4. F Na455 203 Zn Aceta NaOH+A San  San  W K Se Ag SiO <sub>2</sub> Na Sr Tl Sn L Hg 1631 / 245 1 / 7470 / Beceived by (Signature)	Cool Cool HCL. HC H <sub>2</sub> S0 <sub>4</sub> . H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> HP NaHSO 4 NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO 3 Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Con Sample Con VI K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg 1631 / 245 1 / 7470 / 7471 Received by (Signature)  Received by (Signature) Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)  Received by (Signature)	None NO Cool Cool HCL.HC H <sub>2</sub> SO <sub>4</sub> .H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> HP NaHSO <sub>4</sub> NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub> Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Con Sample Con H <sub>3</sub> SiO <sub>2</sub> Na Sr Tl Sn U V Zn H <sub>3</sub> I Gall / 245 1 / 7470 / 7471 Received by (Signature)  Received by (Signature)	Preservative None NO Cool Cool H <sub>2</sub> SO <sub>4</sub> ·H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> HP NaHSO <sub>4</sub> NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub> Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Con VI K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg 1631/2451/7470/7471 Received by (Signature)  Received by (Signature)

Revised Date: 08/25/2020 Rev 2020.2

6/2/2022 (Rev. 1)

# **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-15046-1 SDG Number: Lea Co. NM

Login Number: 15046 **List Source: Eurofins Midland** 

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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**Environment Testing America** 

# **ANALYTICAL REPORT**

**Eurofins Midland** 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-15938-1

Laboratory Sample Delivery Group: Lea Co., NM

Client Project/Site: Flying M SA #2

For:

Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Attn: Cindy Crain

CRAMER

Authorized for release by: 6/20/2022 1:23:25 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Crain Environmental

Project/Site: Flying M SA #2

Laboratory Job ID: 880-15938-1

SDG: Lea Co., NM

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#### **Definitions/Glossary**

Client: Crain Environmental Job ID: 880-15938-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

#### **Qualifiers**

**GC VOA** 

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

S1+ Surrogate recovery exceeds control limits, high biased.
U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

z Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present
PQL Practical Quantitation Limit

PRES Presumptive

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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#### Case Narrative

Job ID: 880-15938-1 Client: Crain Environmental Project/Site: Flying M SA #2 SDG: Lea Co., NM

Job ID: 880-15938-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-15938-1

#### Receipt

The samples were received on 6/15/2022 3:21 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.7°C

#### **GC VOA**

Method 8021B: The following sample was diluted because the initial analysis produced a significant negative result - the absolute value exceeded the reporting limit (RL): MW-3 (880-15938-3). Reporting limits (RLs) are elevated as a result.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: MW-1 (880-15938-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: The method blank for preparation batch 880-27757 and analytical batch 880-27733 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Crain Environmental Job ID: 880-15938-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

Client Sample ID: MW-1 Lab Sample ID: 880-15938-1

Date Collected: 06/14/22 13:50

Date Received: 06/15/22 15:21

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			06/16/22 19:23	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			06/16/22 19:23	1
Ethylbenzene	< 0.000657	U	0.00200	0.000657	mg/L			06/16/22 19:23	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			06/16/22 19:23	1
o-Xylene	< 0.000642	U	0.00200	0.000642	mg/L			06/16/22 19:23	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			06/16/22 19:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130					06/16/22 19:23	1
1,4-Difluorobenzene (Surr)	100		70 - 130					06/16/22 19:23	1
Method: Total BTEX - Total BTE	X Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.000657	U	0.00400	0.000657	mg/L			06/17/22 09:40	1
Analyte		Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
Total TPH	<0.901	U	4.56	0.901	mg/L			06/20/22 12:52	1
Mathada 0045D NM - Discal Day	O	BO) (OO)							
Method: 8015B NM - Diesel Ran	ge Organics (טו	KU) (GC)							
		o				_			D.: E
		Qualifier	RL 150	MDL		<u>D</u>	Prepared	Analyzed	
Gasoline Range Organics	Result <0.901		RL 4.56	MDL 0.901	Unit mg/L	<u>D</u>	Prepared 06/17/22 09:00	Analyzed 06/18/22 07:54	
Gasoline Range Organics (GRO)-C6-C10	<0.901	U	4.56	0.901	mg/L	<u>D</u>	06/17/22 09:00	06/18/22 07:54	1
(GRO)-C6-C10 Diesel Range Organics (Over		U			mg/L	<u>D</u>	<u>.</u>		1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<0.901	U	4.56	0.901	mg/L	<u>D</u>	06/17/22 09:00	06/18/22 07:54	1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<0.901 <0.901	U U	4.56	0.901	mg/L	<u>D</u>	06/17/22 09:00 06/17/22 09:00	06/18/22 07:54 06/18/22 07:54	1 1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	<0.901 <0.901 <0.869	U U	4.56 4.56 4.56	0.901	mg/L	<u>D</u>	06/17/22 09:00 06/17/22 09:00 06/17/22 09:00	06/18/22 07:54 06/18/22 07:54 06/18/22 07:54	1 1 1 1 Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<0.901 <0.901 <0.869 **Recovery 123	U U	4.56 4.56 4.56 <i>Limits</i>	0.901	mg/L	<u>D</u>	06/17/22 09:00 06/17/22 09:00 06/17/22 09:00 <b>Prepared</b>	06/18/22 07:54 06/18/22 07:54 06/18/22 07:54 Analyzed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<0.901 <0.901 <0.869 **Recovery 123 137	U U U <b>Qualifier</b>	4.56 4.56 4.56  Limits 70 - 130	0.901	mg/L	<u>D</u>	06/17/22 09:00 06/17/22 09:00 06/17/22 09:00 <b>Prepared</b> 06/17/22 09:00	06/18/22 07:54 06/18/22 07:54 06/18/22 07:54 Analyzed 06/18/22 07:54	Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<0.901 <0.901 <0.869  **Recovery** 123 137  omatography	U U U <b>Qualifier</b>	4.56 4.56 4.56  Limits 70 - 130	0.901	mg/L mg/L mg/L	<u>D</u>	06/17/22 09:00 06/17/22 09:00 06/17/22 09:00 <b>Prepared</b> 06/17/22 09:00	06/18/22 07:54 06/18/22 07:54 06/18/22 07:54 Analyzed 06/18/22 07:54	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Client Sample ID: MW-2

Date Collected: 06/14/22 14:45

Lab Sample ID: 880-15938-2

Matrix: Water

Date Received: 06/15/22 15:21

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			06/16/22 19:49	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			06/16/22 19:49	1
Ethylbenzene	< 0.000657	U	0.00200	0.000657	mg/L			06/16/22 19:49	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			06/16/22 19:49	1
o-Xylene	<0.000642	U	0.00200	0.000642	mg/L			06/16/22 19:49	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			06/16/22 19:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 _ 130			<del>-</del>		06/16/22 19:49	1
1,4-Difluorobenzene (Surr)	91		70 - 130					06/16/22 19:49	1

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-15938-1

SDG: Lea Co., NM

Client Sample ID: MW-2

Lab Sample ID: 880-15938-2

Date Collected: 06/14/22 14:45 Date Received: 06/15/22 15:21

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.000657	U	0.00400	0.000657	mg/L			06/17/22 09:40	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<0.901	U	4.56	0.901	mg/L			06/20/22 12:52	1
Mothod: 2015P NM Discol Pone	Organica (D	BOV (CC)							
Method: 8015B NM - Diesel Range Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
									Dil Fac
Gasoline Range Organics	<0.901	U	4.56	0.901	mg/L		06/17/22 09:00	06/18/22 09:10	1
(GRO)-C6-C10	0.004		4.50				00/47/00 00 00	00/40/00 00 40	
Diesel Range Organics (Over	<0.901	U	4.56	0.901	mg/L		06/17/22 09:00	06/18/22 09:10	1
C10-C28)									
OII Range Organics (Over C28-C36)	<0.869	U	4.56	0.869	mg/L		06/17/22 09:00	06/18/22 09:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130				06/17/22 09:00	06/18/22 09:10	1
o-Terphenyl	110		70 - 130				06/17/22 09:00	06/18/22 09:10	1
Method: 300.0 - Anions, Ion Chro	matography								
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1440		25.0	1.05	mg/L			06/16/22 23:00	50

**Client Sample ID: MW-3** Lab Sample ID: 880-15938-3 **Matrix: Water** 

Date Collected: 06/14/22 15:40

Date Received: 06/15/22 15:21

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00408	U	0.0200	0.00408	mg/L			06/16/22 20:15	10
Toluene	< 0.00367	U	0.0200	0.00367	mg/L			06/16/22 20:15	10
Ethylbenzene	< 0.00657	U	0.0200	0.00657	mg/L			06/16/22 20:15	10
m-Xylene & p-Xylene	<0.00629	U	0.0400	0.00629	mg/L			06/16/22 20:15	10
o-Xylene	< 0.00642	U	0.0200	0.00642	mg/L			06/16/22 20:15	10
Xylenes, Total	<0.00642	U	0.0400	0.00642	mg/L			06/16/22 20:15	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130			-		06/16/22 20:15	10
1,4-Difluorobenzene (Surr)	94		70 - 130					06/16/22 20:15	10
- Method: Total BTEX - Total BT	EX Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00657	П	0.0400	0.00657	mg/L			06/17/22 09:40	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<0.898	U	4.55	0.898	mg/L			06/20/22 12:52	1
_									
Method: 8015B NM - Diesel Range	<b>Organics (DI</b>	RO) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

4.55

4.55

0.898 mg/L

0.898 mg/L

06/17/22 09:00

06/17/22 09:00

<0.898 U

<0.898 U

C10-C28)

Gasoline Range Organics (GRO)-C6-C10

Diesel Range Organics (Over

Released to Imaging: 1/15/2025 3:53:49 PM

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06/18/22 09:32

06/18/22 09:32

Client: Crain Environmental Job ID: 880-15938-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

**Client Sample ID: MW-3** Lab Sample ID: 880-15938-3 Date Collected: 06/14/22 15:40

Matrix: Water

Date Received: 06/15/22 15:21

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	<0.867	U	4.55	0.867	mg/L		06/17/22 09:00	06/18/22 09:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130				06/17/22 09:00	06/18/22 09:32	1
o-Terphenyl	109		70 - 130				06/17/22 09:00	06/18/22 09:32	1

Method: 300.0 - Anions, Ion Chrom	atography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	469		10.0	0.421	mg/L			06/16/22 23:09	20

# **Surrogate Summary**

Client: Crain Environmental Job ID: 880-15938-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water Prep Type: Total/NA

				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-15720-A-1 MS	Matrix Spike	114	108	
880-15720-A-1 MSD	Matrix Spike Duplicate	106	95	
880-15938-1	MW-1	115	100	
880-15938-2	MW-2	115	91	
880-15938-3	MW-3	118	94	
LCS 880-27653/3	Lab Control Sample	103	99	
LCSD 880-27653/4	Lab Control Sample Dup	109	100	
MB 880-27653/8	Method Blank	83	93	
Surrogate Legend				
BFB = 4-Bromofluorobena	zene (Surr)			

BFB = 4-Bromofluorobenzene (Surr) DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Water Prep Type: Total/NA

		1001	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-15938-1	MW-1	123	137 S1+
880-15938-1 MS	MW-1	92	96
880-15938-1 MSD	MW-1	97	102
880-15938-2	MW-2	99	110
880-15938-3	MW-3	98	109
LCS 880-27757/2-A	Lab Control Sample	94	107
LCSD 880-27757/3-A	Lab Control Sample Dup	99	111
MB 880-27757/1-A	Method Blank	111	127

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

Client: Crain Environmental Project/Site: Flying M SA #2

MD MD

Job ID: 880-15938-1 SDG: Lea Co., NM

#### Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-27653/8

**Matrix: Water** 

Analysis Batch: 27653

Client	Sample	ID:	Meth	od	Blank	
	D.	· '	Tunai	To	to I/NI A	

C Prep Type: Total/NA

	INID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			06/16/22 11:07	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			06/16/22 11:07	1
Ethylbenzene	<0.000657	U	0.00200	0.000657	mg/L			06/16/22 11:07	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			06/16/22 11:07	1
o-Xylene	<0.000642	U	0.00200	0.000642	mg/L			06/16/22 11:07	1
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			06/16/22 11:07	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130		06/16/22 11:07	1
1,4-Difluorobenzene (Surr)	93		70 - 130		06/16/22 11:07	1

Lab Sample ID: LCS 880-27653/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 27653

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.08318 mg/L 83 70 - 130 Toluene 0.100 0.08612 mg/L 86 70 - 130 0.100 0.09575 96 70 - 130 Ethylbenzene mg/L m-Xylene & p-Xylene 0.200 0.1891 95 70 - 130 mg/L 0.100 0.09290 93 70 - 130 o-Xylene mg/L

LCS LCS

Surrogate	%Recovery Qua	alifier Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: LCSD 880-27653/4

**Matrix: Water** 

Analysis Batch: 27653

Client Sample ID: Lab	<b>Control Sample Dup</b>
	Prop Type: Total/NA

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.08934		mg/L		89	70 - 130	7	20	
Toluene	0.100	0.09106		mg/L		91	70 - 130	6	20	
Ethylbenzene	0.100	0.1006		mg/L		101	70 - 130	5	20	
m-Xylene & p-Xylene	0.200	0.2001		mg/L		100	70 - 130	6	20	
o-Xylene	0.100	0.09787		mg/L		98	70 - 130	5	20	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

_ab	8			Client Sample ID: Matrix Spike
Matrix: Water				Prep Type: Total/NA
Analysis Batch: 27653				
	Sample Sample	Snike	MS MS	%Rec

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.000408	U	0.100	0.1035		mg/L		103	70 - 130	
Toluene	<0.000367	U	0.100	0.1080		mg/L		108	70 - 130	

# **QC Sample Results**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-15938-1

SDG: Lea Co., NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-15720-A-1 MS

Matrix: Water Analysis Batch: 27653 Client Sample ID: Matrix Spike

Prep Type: Total/NA

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.000657 U 0.100 0.1158 116 70 - 130 mg/L m-Xylene & p-Xylene <0.000629 U 0.200 0.2287 mg/L 114 70 - 130 0.100 o-Xylene <0.000642 U 0.1147 mg/L 70 - 130 115

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 880-15720-A-1 MSD

Matrix: Water

**Analysis Batch: 27653** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added RPD Limit Analyte Result Qualifier Unit %Rec Limits 0.100 Benzene <0.000408 U 0.08268 mg/L 83 70 - 130 22 25 Toluene <0.000367 U 0.100 0.08640 mg/L 86 70 - 130 22 25 Ethylbenzene <0.000657 U 0.100 0.09580 96 70 - 130 19 25 mg/L <0.000629 U 0.200 0.1898 25 m-Xylene & p-Xylene mg/L 95 70 - 130 19 <0.000642 U 0.100 0.09397 70 - 130 20 o-Xylene mg/L 94

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-27757/1-A

Matrix: Water

Analysis Batch: 27733

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 27757

ricp Baton. 27707

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	1.231	J	4.57	0.904	mg/L		06/17/22 09:00	06/18/22 06:49	1
(GRO)-C6-C10 Diesel Range Organics (Over	1.153	J	4.57	0.904	mg/L		06/17/22 09:00	06/18/22 06:49	1
C10-C28)	10.070		4.57	0.070	/1		00/47/00 00:00	00/40/00 00:40	4
Oll Range Organics (Over C28-C36)	<0.872	U	4.57	0.872	mg/L		06/17/22 09:00	06/18/22 06:49	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	06/17/22 09:00	06/18/22 06:49	1
o-Terphenyl	127		70 - 130	06/17/22 09:00	06/18/22 06:49	1

Lab Sample ID: LCS 880-27757/2-A

**Matrix: Water** 

**Analysis Batch: 27733** 

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 27757

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	91.7	74.37		mg/L		81	75 - 125	
(GRO)-C6-C10								
Diesel Range Organics (Over	91.7	90.76		mg/L		99	75 - 125	
C10-C28)								

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Job ID: 880-15938-1

SDG: Lea Co., NM

# Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-27757/2-A

**Matrix: Water** 

**Analysis Batch: 27733** 

**Analysis Batch: 27733** 

Client: Crain Environmental

Project/Site: Flying M SA #2

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 27757

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 94 70 - 130 o-Terphenyl 107 70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 27757

Lab Sample ID: LCSD 880-27757/3-A **Matrix: Water** 

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 92.0 77.98 85 75 - 125 5 20 Gasoline Range Organics mg/L (GRO)-C6-C10 Diesel Range Organics (Over 92.0 94.29 102 mg/L 75 - 12520 C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: 880-15938-1 MS Client Sample ID: MW-1 **Matrix: Water** 

Prep Type: Total/NA

**Analysis Batch: 27733** Prep Batch: 27757 Sample Sample Spike MS MS

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <0.901 U 90.9 91.56 mg/L 101 75 - 125 (GRO)-C6-C10 Diesel Range Organics (Over <0.901 U 90.9 91.27 mg/L 100 75 - 125

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 92 o-Terphenyl 96 70 - 130

Lab Sample ID: 880-15938-1 MSD Client Sample ID: MW-1

**Matrix: Water** Prep Type: Total/NA Analysis Batch: 27733 Prep Batch: 27757

Sample Sample Snika MeD MeD

	Janiple Janip	opike opike	WISD	WISD			/01 <b>\C</b> C		KFD	
Analyte	Result Quali	ifier Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	<0.901 U	90.9	98.53	mg/L		108	75 - 125	7	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	<0.901 U	90.9	98.71	mg/L		109	75 - 125	8	20	

C10-C28)

	พรบ	INISD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	102		70 - 130

Med Med

Job ID: 880-15938-1

Client: Crain Environmental Project/Site: Flying M SA #2

SDG: Lea Co., NM

Client Sample ID: Method Blank

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

# Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-27724/3

**Matrix: Water** 

**Analysis Batch: 27724** 

Prep Type: Total/NA

Analyte Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac Chloride <0.0210 U 0.500 0.0210 mg/L 06/16/22 19:24

Lab Sample ID: LCS 880-27724/4 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 27724** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 25.0 25.63 mg/L 103 90 - 110

MB MB

Lab Sample ID: LCSD 880-27724/5 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 27724

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 25.0 25.56 mg/L 102 90 - 110

Lab Sample ID: 880-15951-A-1 MS

**Matrix: Water** 

**Analysis Batch: 27724** 

MS MS Sample Sample Spike %Rec Analyte Added Result Qualifier Result Qualifier Unit %Rec Limits Chloride 40.3 25.0 64.43 90 - 110 mg/L

Lab Sample ID: 880-15951-A-1 MSD

**Matrix: Water** 

**Analysis Batch: 27724** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	40.3		25.0	64.56		mg/L		97	90 - 110		20	

Lab Sample ID: 880-15993-A-1 MS

**Matrix: Water** 

**Analysis Batch: 27724** 

Sample Spike MS MS %Rec Sample Added Qualifier Analyte Result Result Qualifier Unit %Rec Limits Chloride 8.59 25.0 33 94 mg/L 101 90 - 110

Lab Sample ID: 880-15993-A-1 MSD

**Matrix: Water** 

Analysis Batch: 27724											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	8.59		25.0	33.94		mg/L		101	90 - 110	0	20

# **QC Association Summary**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-15938-1

SDG: Lea Co., NM

**GC VOA** 

Analysis Batch: 27653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	8021B	
880-15938-2	MW-2	Total/NA	Water	8021B	
880-15938-3	MW-3	Total/NA	Water	8021B	
MB 880-27653/8	Method Blank	Total/NA	Water	8021B	
LCS 880-27653/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-27653/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-15720-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
880-15720-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Analysis Batch: 27782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	Total BTEX	
880-15938-2	MW-2	Total/NA	Water	Total BTEX	
880-15938-3	MW-3	Total/NA	Water	Total BTEX	

**GC Semi VOA** 

Analysis Batch: 27733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	8015B NM	27757
880-15938-2	MW-2	Total/NA	Water	8015B NM	27757
880-15938-3	MW-3	Total/NA	Water	8015B NM	27757
MB 880-27757/1-A	Method Blank	Total/NA	Water	8015B NM	27757
LCS 880-27757/2-A	Lab Control Sample	Total/NA	Water	8015B NM	27757
LCSD 880-27757/3-A	Lab Control Sample Dup	Total/NA	Water	8015B NM	27757
880-15938-1 MS	MW-1	Total/NA	Water	8015B NM	27757
880-15938-1 MSD	MW-1	Total/NA	Water	8015B NM	27757

Prep Batch: 27757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	8015NM Aq Prep	
880-15938-2	MW-2	Total/NA	Water	8015NM Aq Prep	
880-15938-3	MW-3	Total/NA	Water	8015NM Aq Prep	
MB 880-27757/1-A	Method Blank	Total/NA	Water	8015NM Aq Prep	
LCS 880-27757/2-A	Lab Control Sample	Total/NA	Water	8015NM Aq Prep	
LCSD 880-27757/3-A	Lab Control Sample Dup	Total/NA	Water	8015NM Aq Prep	
880-15938-1 MS	MW-1	Total/NA	Water	8015NM Aq Prep	
880-15938-1 MSD	MW-1	Total/NA	Water	8015NM Aq Prep	

Analysis Batch: 27903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	8015 NM	
880-15938-2	MW-2	Total/NA	Water	8015 NM	
880-15938-3	MW-3	Total/NA	Water	8015 NM	

**HPLC/IC** 

Analysis Batch: 27724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15938-1	MW-1	Total/NA	Water	300.0	
880-15938-2	MW-2	Total/NA	Water	300.0	
880-15938-3	MW-3	Total/NA	Water	300.0	

**Eurofins Midland** 

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# **QC Association Summary**

Client: Crain Environmental Job ID: 880-15938-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

# **HPLC/IC** (Continued)

#### **Analysis Batch: 27724 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-27724/3	Method Blank	Total/NA	Water	300.0	
LCS 880-27724/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-27724/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-15951-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-15951-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
880-15993-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-15993-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

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Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-15938-1 SDG: Lea Co., NM

Client Sample ID: MW-1

Lab Sample ID: 880-15938-1

Matrix: Water

Date Collected: 06/14/22 13:50 Date Received: 06/15/22 15:21

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1			27653	06/16/22 19:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27782	06/17/22 09:40	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27903	06/20/22 12:52	SM	XEN MID
Total/NA	Prep	8015NM Aq Prep			32.9 mL	3 mL	27757	06/17/22 09:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27733	06/18/22 07:54	SM	XEN MID
Total/NA	Analysis	300.0		10			27724	06/17/22 11:21	СН	XEN MID

Client Sample ID: MW-2 Lab Sample ID: 880-15938-2

Date Collected: 06/14/22 14:45
Date Received: 06/15/22 15:21

Matrix: Water

Dil Batch Batch Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Analysis 8021B 27653 06/16/22 19:49 MR XEN MID Total/NA Analysis Total BTEX 27782 06/17/22 09:40 AJ XEN MID Total/NA Analysis 8015 NM 27903 06/20/22 12:52 SM XEN MID Total/NA 8015NM Aq Prep 32.9 mL 3 mL 27757 06/17/22 09:00 DM XEN MID Prep Total/NA Analysis 8015B NM 27733 06/18/22 09:10 SM XEN MID 1 Total/NA Analysis 300.0 50 27724 06/16/22 23:00 XEN MID

Client Sample ID: MW-3

Date Collected: 06/14/22 15:40

Lab Sample ID: 880-15938-3

Matrix: Water

Date Received: 06/15/22 15:21

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		10			27653	06/16/22 20:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27782	06/17/22 09:40	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27903	06/20/22 12:52	SM	XEN MID
Total/NA	Prep	8015NM Aq Prep			33 mL	3 mL	27757	06/17/22 09:00	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27733	06/18/22 09:32	SM	XEN MID
Total/NA	Analysis	300.0		20			27724	06/16/22 23:09	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

**Eurofins Midland** 

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# **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-15938-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

#### **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NI	ELAP	T104704400-21-22	06-30-22
the agency does not of	er certification.	•	ed by the governing authority. This list ma	ay include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	
200.0				
300.0		Water	Chloride	
8015 NM		water Water	Chloride Total TPH	

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# **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-15938-1

SDG: Lea Co., NM

_	

Method	Method Description	Protocol	Laboratory
3021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
3015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
3015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5030B	Purge and Trap	SW846	XEN MID
3015NM Aq Prep	Microextraction	SW846	XEN MID

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates. TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-15938-1

SDG: Lea Co., NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-15938-1	MW-1	Water	06/14/22 13:50	06/15/22 15:21
880-15938-2	MW-2	Water	06/14/22 14:45	06/15/22 15:21
880-15938-3	MW-3	Water	06/14/22 15:40	06/15/22 15:21

City, State ZIP-

13761

Address.

State of Project: NH

Program:

UST/PST PRP Brownfields

RRC □

Superfund

Work Order Comments

www.xenco.com

Bill to: (if different)

Company Name:

Company Name Address.

2925 1500g

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# Chain of Custody

Houston, TX (281) 240-4200, Dallas TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392 7550 Carlsbad, NM (575) 988-3199

Xenco

Environment Testing

Work Order No:_	
15930	

Revised Date: 08/25/2020 Rev. 2020.2	Rev						
		4	5.0		To be the second desired of the second desired desired of the second desired desir		5
		2	100 S	R	R		- bungle
Date/Time	Received by (Signature)	Relinquished by (Signature)	Date/Time		Received by: (Signature)	(Signature) Rev	Relinquished by: (Signature)
	titons htrol negotiated.	of service. Eurofins Xenco, will be liable only for the cost of safples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	notes Aenco, its amiliates and uses incurred by the client if surofins Xenco, but not analy	sibility for any losses or expension cach sample submitted to	d shall not assume any respondence of \$5 in the project and a charge of \$5	III be liable only for the cost of samples an m charge of \$85.00 will be appled to eac	of service. Eurofins Xenco wi of Eurofins Xenco. A minimu
7471	Hg 1631/2451/7470,	BRCHA SD AS Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U	ob As Ba Be Cd C	ICLP / SPLP 6010 8RCKA	CI I CLP / St	whice Standard of this document and refinguishment of samples constituted to the constitution of the const	Notice: Signature of this doct
V Zn	o Ni K Se Ag SıO <sub>2</sub> Na Sr Tl Sn U V Zn	Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se	Al Sb As Ba Be B Cd Ca	M Texas 11 Al Sk	8RCR	0 200.8 / 6020:	Total 200.7 / 6010
	of Custody					The state of the s	
	80-15938 Chair	/00					
				_			
						1	M₩/, λ
			XXX	6	24th CC14110	6 W 61	MW-2
			XX	-  - 6	6/14/22 1350	BW 61	MN-1
Sample Comments	Sam		TT Bi	Depth   Grab/ # of   Comp   Cont	Date Time Sampled Sampled	Matrix	Sample Identification
NaOH+Ascorbic Acid SAPC	NaOH+Aso		est Estan		Corrected Temperature	Cor	Iotal Containers.
Zn Acetate+NaOH Zn	Zn Acetate		8. K		Temperature Reading	Yes No (N/A Ten	Sample Custody Seals.
NaSO 3	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub>		01.		Correction Factor	No NA	Cooler Custody Seals.
NABIS	NaHSO 4 NABIS		5 M	LI P	Thermometer ID:	Yes No	Samples Received Intact:
	H <sub>3</sub> PO <sub>4</sub> HP		1	Yes No eter:	No Wet Ice:	Temp Blank: Yes	SAMPLE RECEIPT
	H,S0 4 H,				the lab, if rece		PO#
	HCL. HC			TAT starts the day received by	TAT starts the	Lizary Gain	Sampler's Name:
	Cool Cool			6/23/22	Due Date:	Lea Co. NM	Project Location.
DI Water H.O	None NO			Rush Pres.	XRoutine	1.	Project Number
Preservative Codes	Pres	ANALYSIS REQUEST	(	Turn Around	Turn	Flying M SA #	Project Name
Other·	Deliverables. EDD ADaPT		Crain@ amail.com	Cindy Or	Email	(575) 441- 7244	Phone:
TRRP Level IV	Reporting Level III Level III PST/UST TRRP	7X 79710 Repor	Midland.	City, State ZIP	761	Lessa, 72 7976	City, State ZIP

# **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-15938-1 SDG Number: Lea Co., NM

Login Number: 15938 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or ampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True	

www.eurofinsus.com/Env

Released to Imaging: 1/15/2025 3:53:49 PM

**Environment Testing America** 

# **ANALYTICAL REPORT**

**Eurofins Midland** 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-20129-1

Laboratory Sample Delivery Group: Lea Co., NM

Client Project/Site: Flying M SA #2

For:

Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Attn: Cindy Crain

CRAMER

Authorized for release by: 10/19/2022 10:07:58 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Crain Environmental

Project/Site: Flying M SA #2

Laboratory Job ID: 880-20129-1

SDG: Lea Co., NM

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#### Definitions/Glossary

Client: Crain Environmental Job ID: 880-20129-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

**Qualifiers** 

**GC VOA** 

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

S1+ Surrogate recovery exceeds control limits, high biased.
U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

F1 MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Example 2 Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery

CFL Contains Free Liquid

CFU Colony Forming Unit

CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

 NEG
 Negative / Absent

 POS
 Positive / Present

 PQL
 Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

**Eurofins Midland** 

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#### **Case Narrative**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-20129-1

SDG: Lea Co., NM

Job ID: 880-20129-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-20129-1

#### Receipt

The samples were received on 10/10/2022 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.9°C

#### **Receipt Exceptions**

The following samples analyzed for method <FRACTION\_METHOD> were received and analyzed from an unpreserved bulk soil jar: MW-4 (0-1') (880-20129-1), MW-4 (5') (880-20129-2), MW-4 (10') (880-20129-3), MW-4 (15') (880-20129-4), MW-4 (20') (880-20129-5), MW-4 (25') (880-20129-6) and MW-4 (880-20129-7).

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC Semi VOA

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-37209 and analytical batch 880-37194 was outside the upper control limits.

Method 8015MOD\_NM: The method blank for preparation batch 880-37209 and analytical batch 880-37194 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

 $No \ additional \ analytical \ or \ quality \ issues \ were \ noted, \ other \ than \ those \ described \ above \ or \ in \ the \ Definitions/ \ Glossary \ page.$ 

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36661 and analytical batch 880-36885 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client: Crain Environmental
Project/Site: Flying M SA #2

Job ID: 880-20129-1 SDG: Lea Co., NM

Client Sample ID: MW-4 (0-1')

Date Collected: 10/06/22 10:24 Date Received: 10/10/22 09:00

Sample Depth: 0-1'

Lab Sample ID: 880-20129-1

Matrix: Solid

**Matrix: Solid** 

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL MDL Dil Fac Unit D Prepared Analyzed 5.02 10/13/22 17:51 Chloride 27.3 0.397 mg/Kg

Client Sample ID: MW-4 (5')

Date Collected: 10/06/22 10:30

Lab Sample ID: 880-20129-2

Matrix: Solid

Date Collected: 10/06/22 10:30 Date Received: 10/10/22 09:00

Sample Depth: 5'

Method: MCAWW 300.0 - Anions, Ion Chromatography - SolubleAnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FacChloride15.55.020.397mg/Kg10/13/22 17:581

Client Sample ID: MW-4 (10')

Lab Sample ID: 880-20129-3

Date Collected: 10/06/22 10:40 Date Received: 10/10/22 09:00

Sample Depth: 10'

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL MDL Unit D Analyzed Dil Fac Prepared Chloride 5.02 10/13/22 18:06 96.5 0.397 mg/Kg

Client Sample ID: MW-4

Lab Sample ID: 880-20129-7

Date Collected: 10/06/22 11:35

Matrix: Water

Date Received: 10/10/22 09:00

Method: SW846 8021B - Volatile Organic Compounds (GC) Result Qualifier RL Dil Fac Analyte MDL Unit D Prepared Analyzed Benzene <0.000408 U 0.00200 0.000408 mg/L 10/12/22 20:36 Toluene <0.000367 U 0.00200 0.000367 mg/L 10/12/22 20:36 Ethylbenzene < 0.000657 0.00200 0.000657 mg/L 10/12/22 20:36 m-Xylene & p-Xylene < 0.000629 0.00400 0.000629 10/12/22 20:36 ma/L o-Xylene <0.000642 U 0.00200 0.000642 10/12/22 20:36 Xylenes, Total <0.000642 U 0.00400 0.000642 mg/L 10/12/22 20:36 %Recovery Qualifier Limits Analyzed Dil Fac Surrogate Prepared 105 70 - 130 10/12/22 20:36 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) 88 70 - 130 10/12/22 20:36

**Method: TAL SOP Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RL MDL Unit D Dil Fac Prepared Analyzed 0.00400 Total BTEX <0.000657 Ū 0.000657 10/13/22 11:37 mg/L

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Total TPH <0.904 U 4.57 0.904 mg/L 10/19/22 10:15

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<0.904	U	4.57	0.904	mg/L		10/18/22 10:08	10/18/22 13:17	1
Diesel Range Organics (Over C10-C28)	<0.904	U	4.57	0.904	mg/L		10/18/22 10:08	10/18/22 13:17	1

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Client: Crain Environmental Job ID: 880-20129-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

Client Sample ID: MW-4 Lab Sample ID: 880-20129-7

Date Collected: 10/06/22 11:35 Matrix: Water Date Received: 10/10/22 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	<0.872	U	4.57	0.872	mg/L		10/18/22 10:08	10/18/22 13:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130				10/18/22 10:08	10/18/22 13:17	1
o-Terphenyl	113		70 - 130				10/18/22 10:08	10/18/22 13:17	1

Method: MCAWW 300.0 - Anions, Ion Chromatography								
	Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	367	5.00	3.46 mg/L			10/12/22 19:35	10

# **Surrogate Summary**

Client: Crain Environmental Job ID: 880-20129-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
80-20129-7	MW-4	105	88	
80-20129-7 MS	MW-4	107	91	
80-20129-7 MSD	MW-4	114	104	
CS 880-36730/3	Lab Control Sample	107	98	
CSD 880-36730/4	Lab Control Sample Dup	107	87	
1B 880-36730/8	Method Blank	70	89	
Surrogate Legend				

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Water Prep Type: Total/NA

		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-20129-7	MW-4	101	113
880-20296-F-8-A MS	Matrix Spike	89	91
880-20296-F-8-B MSD	Matrix Spike Duplicate	88	88
LCS 880-37209/2-A	Lab Control Sample	103	117
LCSD 880-37209/3-A	Lab Control Sample Dup	95	108
MB 880-37209/1-A	Method Blank	113	131 S1+

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Crain Environmental
Project/Site: Flying M SA #2

Job ID: 880-20129-1 SDG: Lea Co., NM

2

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36730/8

Matrix: Water

Analyte

**Analysis Batch: 36730** 

Client Sam	ple ID:	Meth	od Bl	ank
	Dron	Typo:	Total	/NIA

МВ	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
000408	U	0.00200	0.000408	mg/L			10/12/22 20:09	1
000367	U	0.00200	0.000367	ma/l			10/12/22 20:09	1

Benzene <0.0 Toluene < 0.000367 Ethylbenzene <0.000657 U 0.00200 0.000657 mg/L 10/12/22 20:09 m-Xylene & p-Xylene <0.000629 U 0.00400 0.000629 mg/L 10/12/22 20:09 o-Xylene <0.000642 U 0.00200 0.000642 mg/L 10/12/22 20:09 <0.000642 U 0.00400 10/12/22 20:09 Xylenes, Total 0.000642 mg/L

 MB MB
 MB

 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 70
 70 - 130
 10/12/22 20:09
 1

 89
 70 - 130
 10/12/22 20:09
 1

Lab Sample ID: LCS 880-36730/3

Matrix: Water

Surrogate

**Analysis Batch: 36730** 

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1050 mg/L 105 70 - 130 Toluene 0.100 0.1086 mg/L 109 70 - 130 Ethylbenzene 0.100 0.1061 mg/L 106 70 - 130 m-Xylene & p-Xylene 0.200 0.2191 mg/L 110 70 - 130 o-Xylene 0.100 0.09878 mg/L 99 70 - 130

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 107
 70 - 130

 1,4-Difluorobenzene (Surr)
 98
 70 - 130

Lab Sample ID: LCSD 880-36730/4

**Matrix: Water** 

**Analysis Batch: 36730** 

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Benzene 0.100 0.1038 104 70 - 130 20 mg/L Toluene 0.100 0.1086 mg/L 109 70 - 130 0 20 0.100 0.1103 mg/L 110 70 - 130 20 Ethylbenzene m-Xylene & p-Xylene 0.200 0.2297 mg/L 115 70 - 130 20 mg/L 0.100 0.1055 105 70 - 130 20 o-Xylene

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 107
 70 - 130

 1,4-Difluorobenzene (Surr)
 87
 70 - 130

Lab Sample ID: 880-20129-7 MS

**Matrix: Water** 

Analysis Batch: 36730

Client Sample ID: MW-4
Prep Type: Total/NA

•	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.000408	U	0.100	0.1044		mg/L		104	70 - 130
Toluene	<0.000367	U	0.100	0.1055		mg/L		106	70 - 130

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Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20129-1 SDG: Lea Co., NM

# Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-20129-7 MS

**Matrix: Water** 

Analysis Batch: 36730

Client Sample ID: MW-4 Prep Type: Total/NA

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 0.100 Ethylbenzene <0.000657 U 0.09995 100 70 - 130 mg/L m-Xylene & p-Xylene <0.000629 0.200 0.2049 mg/L 102 70 - 130 <0.000642 U 0.100 o-Xylene 0.09627 mg/L 96 70 - 130

MS MS

Surrogate	%Recovery Qu	ualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

Lab Sample ID: 880-20129-7 MSD

**Matrix: Water** 

Analysis Batch: 36730

Client Sample ID: MW-4 Prep Type: Total/NA

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 0.100 Benzene <0.000408 U 0.1167 mg/L 117 70 - 130 11 25 <0.000367 U Toluene 0.100 0.1148 mg/L 115 70 - 130 8 25 Ethylbenzene <0.000657 U 0.100 0.1146 115 70 - 130 25 mg/L 14 <0.000629 U 0.200 70 - 130 25 m-Xylene & p-Xylene 0.2346 mg/L 117 14 <0.000642 U 0.100 0.1079 70 - 130 11 o-Xylene mg/L 108

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

#### Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-37209/1-A

**Matrix: Water** 

Analysis Batch: 37194

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 37209

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	2.263	J	4.55	0.898	mg/L		10/18/22 10:08	10/18/22 11:15	1
Diesel Range Organics (Over C10-C28)	1.319	J	4.55	0.898	mg/L		10/18/22 10:08	10/18/22 11:15	1
Oll Range Organics (Over C28-C36)	<0.867	U	4.55	0.867	mg/L		10/18/22 10:08	10/18/22 11:15	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	10/18/22 10:08	10/18/22 11:15	1
o-Terphenyl	131	S1+	70 - 130	10/18/22 10:08	10/18/22 11:15	1

Lab Sample ID: LCS 880-37209/2-A

**Matrix: Water** 

Analysis Batch: 37194

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 37209

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	90.4	90.37		mg/L		100	75 - 125
(GRO)-C6-C10							
Diesel Range Organics (Over	90.4	91.17		mg/L		101	75 - 125
C10-C28)							

Limits

70 - 130

70 - 130

Job ID: 880-20129-1

SDG: Lea Co., NM

# Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

LCS LCS

%Recovery Qualifier

103

117

Lab Sample ID: LCS 880-37209/2-A

**Matrix: Water** 

Surrogate

1-Chlorooctane

Analysis Batch: 37194

Client: Crain Environmental

Project/Site: Flying M SA #2

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37209

o-Terphenyl Lab Sample ID: LCSD 880-37209/3-A

**Matrix: Water** 

Analysis Batch: 37194

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 37209

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 90.6 85.33 94 75 - 125 6 20 Gasoline Range Organics mg/L (GRO)-C6-C10 Diesel Range Organics (Over 90.6 85.39 94 mg/L 75 - 12520 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 95 70 - 130 1-Chlorooctane 108 70 - 130 o-Terphenyl

Lab Sample ID: 880-20296-F-8-A MS Client Sample ID: Matrix Spike

**Matrix: Water** 

Analysis Batch: 37194

Prep Type: Total/NA

Prep Batch: 37209

Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics < 0.904 U F1 91.2 91.52 mg/L 100 75 - 125 (GRO)-C6-C10 Diesel Range Organics (Over <0.904 UF1 91.2 77.49 mg/L 85 75 - 125

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 89 70 - 130 o-Terphenyl 91

Lab Sample ID: 880-20296-F-8-B MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** 

Analysis Batch: 37194

Prep Type: Total/NA

Prep Batch: 37209

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	<0.904	U F1	91.5	86.99		mg/L		95	75 - 125	5	20	
(GRO)-C6-C10												
Diesel Range Organics (Over	< 0.904	U F1	91.5	75.07		mg/L		82	75 - 125	3	20	
C10 C28)												

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	88		70 - 130

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10/19/2022

Job ID: 880-20129-1

Client: Crain Environmental Project/Site: Flying M SA #2

SDG: Lea Co., NM

Prep Type: Total/NA

Client Sample ID: Method Blank

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36823/3 **Matrix: Water** 

**Analysis Batch: 36823** 

MB MB

Analyte Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac Chloride <0.346 U 0.500 0.346 mg/L 10/12/22 18:34

Lab Sample ID: LCS 880-36823/4 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 36823** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 25.0 25.87 mg/L 103 90 - 110

Lab Sample ID: LCSD 880-36823/5 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 36823** 

Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 25.0 25.94 mg/L 104 90 - 110

Lab Sample ID: 880-20237-A-1 MS

**Matrix: Water** 

**Analysis Batch: 36823** 

MS MS Spike %Rec Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Chloride 87.0 25.0 109.8 90 - 110 mg/L

Lab Sample ID: 880-20237-A-1 MSD

**Matrix: Water** 

**Analysis Batch: 36823** 

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 87.0 25.0 110.0 mg/L 92 90 - 110

Lab Sample ID: MB 880-36661/1-A

Matrix: Solid

**Analysis Batch: 36885** 

MB MB

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride <0.395 U 5.00 0.395 mg/Kg 10/13/22 15:47

Lab Sample ID: LCS 880-36661/2-A

**Matrix: Solid** 

**Analysis Batch: 36885** 

LCS LCS %Rec Spike Added Result Qualifier Limits Analyte Unit %Rec Chloride 250 267.3 mg/Kg 107 90 - 110

Lab Sample ID: LCSD 880-36661/3-A

**Matrix: Solid** 

**Analysis Batch: 36885** 

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 250 254.7 mg/Kg 102 90 - 110 20

# **QC Sample Results**

Client: Crain Environmental Job ID: 880-20129-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-20128-A-21-B MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 36885

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	701	F1	248	910.5	F1	mg/Kg		85	90 - 110	

Lab Sample ID: 880-20128-A-21-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 36885

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec 901.2 F1 Chloride 701 F1 248 mg/Kg 81 90 - 110

# **QC Association Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20129-1 SDG: Lea Co., NM

#### **GC VOA**

#### Analysis Batch: 36730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-7	MW-4	Total/NA	Water	8021B	
MB 880-36730/8	Method Blank	Total/NA	Water	8021B	
LCS 880-36730/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-36730/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-20129-7 MS	MW-4	Total/NA	Water	8021B	
880-20129-7 MSD	MW-4	Total/NA	Water	8021B	

# Analysis Batch: 36866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-7	MW-4	Total/NA	Water	Total BTEX	

#### **GC Semi VOA**

#### Analysis Batch: 37194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-7	MW-4	Total/NA	Water	8015B NM	37209
MB 880-37209/1-A	Method Blank	Total/NA	Water	8015B NM	37209
LCS 880-37209/2-A	Lab Control Sample	Total/NA	Water	8015B NM	37209
LCSD 880-37209/3-A	Lab Control Sample Dup	Total/NA	Water	8015B NM	37209
880-20296-F-8-A MS	Matrix Spike	Total/NA	Water	8015B NM	37209
880-20296-F-8-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015B NM	37209

#### Prep Batch: 37209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep	p Batch
880-20129-7	MW-4	Total/NA	Water	8015NM Aq Prep	
MB 880-37209/1-A	Method Blank	Total/NA	Water	8015NM Aq Prep	
LCS 880-37209/2-A	Lab Control Sample	Total/NA	Water	8015NM Aq Prep	
LCSD 880-37209/3-A	Lab Control Sample Dup	Total/NA	Water	8015NM Aq Prep	
880-20296-F-8-A MS	Matrix Spike	Total/NA	Water	8015NM Aq Prep	
880-20296-F-8-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015NM Aq Prep	

#### Analysis Batch: 37291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-7	MW-4	Total/NA	Water	8015 NM	

#### HPLC/IC

#### Leach Batch: 36661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-1	MW-4 (0-1')	Soluble	Solid	DI Leach	
880-20129-2	MW-4 (5')	Soluble	Solid	DI Leach	
880-20129-3	MW-4 (10')	Soluble	Solid	DI Leach	
MB 880-36661/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36661/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36661/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-20128-A-21-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-20128-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 36823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-7	MW-4	Total/NA	Water	300.0	
MB 880-36823/3	Method Blank	Total/NA	Water	300.0	

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# **QC Association Summary**

Client: Crain Environmental Job ID: 880-20129-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

# **HPLC/IC** (Continued)

#### **Analysis Batch: 36823 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-36823/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-36823/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-20237-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-20237-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### Analysis Batch: 36885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20129-1	MW-4 (0-1')	Soluble	Solid	300.0	36661
880-20129-2	MW-4 (5')	Soluble	Solid	300.0	36661
880-20129-3	MW-4 (10')	Soluble	Solid	300.0	36661
MB 880-36661/1-A	Method Blank	Soluble	Solid	300.0	36661
LCS 880-36661/2-A	Lab Control Sample	Soluble	Solid	300.0	36661
LCSD 880-36661/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36661
880-20128-A-21-B MS	Matrix Spike	Soluble	Solid	300.0	36661
880-20128-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36661

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Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20129-1 SDG: Lea Co., NM

Client Sample ID: MW-4 (0-1')

Lab Sample ID: 880-20129-1

Date Collected: 10/06/22 10:24 Date Received: 10/10/22 09:00 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	36661	10/11/22 10:10	KS	EET MID
Soluble	Analysis	300.0		1			36885	10/13/22 17:51	CH	EET MID

Client Sample ID: MW-4 (5')

Lab Sample ID: 880-20129-2

Date Collected: 10/06/22 10:30 Matrix: Solid

Date Received: 10/10/22 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	36661	10/11/22 10:10	KS	EET MID
Soluble	Analysis	300.0		1			36885	10/13/22 17:58	CH	EET MID

Client Sample ID: MW-4 (10')

Lab Sample ID: 880-20129-3

Date Collected: 10/06/22 10:40 Matrix: Solid

Date Received: 10/10/22 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	36661	10/11/22 10:10	KS	EET MID
Soluble	Analysis	300.0		1			36885	10/13/22 18:06	CH	EET MID

Client Sample ID: MW-4 Lab Sample ID: 880-20129-7

Date Collected: 10/06/22 11:35 Date Received: 10/10/22 09:00 Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B	_	1	5 mL	5 mL	36730	10/12/22 20:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36866	10/13/22 11:37	AJ	EET MID
Total/NA	Analysis	8015 NM		1			37291	10/19/22 10:15	SM	EET MID
Total/NA	Prep	8015NM Aq Prep			32.8 mL	3 mL	37209	10/18/22 10:08	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37194	10/18/22 13:17	SM	EET MID
Total/NA	Analysis	300.0		10			36823	10/12/22 19:35	СН	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-20129-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

### **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	P	rogram	Identification Number	<b>Expiration Date</b>
Texas	N	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not of		ut the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for whic
Analysis Method	Prep Method	Matrix	Analyte	
			,	
300.0		Water	Chloride	
300.0 8015 NM		Water Water		

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### **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20129-1

SDG: Lea Co., NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	MCAWW	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Aq Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

#### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20129-1

SDG: Lea Co., NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-20129-1	MW-4 (0-1')	Solid	10/06/22 10:24	10/10/22 09:00	0-1'
880-20129-2	MW-4 (5')	Solid	10/06/22 10:30	10/10/22 09:00	5'
880-20129-3	MW-4 (10')	Solid	10/06/22 10:40	10/10/22 09:00	10'
880-20129-7	MW-4	Water	10/06/22 11:35	10/10/22 09:00	

Date/Time

Received by (Signature)

Relinquished by (Signature)

Date/Time

Received by (Signature)

Relinquished by (Signature)

10122

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco, will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

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Woi 880-20129 Chain of Custody

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

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Project Names   Circular Comments   Circular				Translation (Management of Management of Man	www.xenco com	Page / of /
Control	(indy (		Bill to: (if different)	1005a Hale	Work Order Com	nments
State of Project   The State	Cain	ental	Company Name:	Southwest Rovalties	1	1
Name: Flying M SA #2 Turn Around Floats Conditions Cond	2425 6.		Address.	P.O. BOX 53570	State of Project: NM	
(575) 44/: 7244   Email   Cirply Crain @ AmalYSIS REQUES     Number	Colessa.	1761	City, State ZIP	History TX 79710	Reporting Level      PST	T/UST TRRP Level IV
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Yes No   With   Temperature Reading   S-7   With State   S-0   With Sampled   Sample	Yes No (N/A)	rrection Factor	QZ .	10		Agnos 4 NASO .
Corrected Temperature   S C	Yes No N/A	nperature Reading	いら			ra 25253 raso 3
Identification   Matrix   Date   Time   Depth   Grab/   # of   $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	)	rrected Temperature	SQ		Z	-III ACECACETIVACH ZIII VaOH+Ascorbic Acid SAPC
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$(15.)$ $5 \frac{90\mu_{122}}{1050}$ $15.0$ $2.1$ $(20.)$ $5 \frac{90\mu_{122}}{1052}$ $1.05$ $20.0$ $0.0$ $1 (25.)$ $5 \frac{90\mu_{122}}{1052}$ $1.25$ $25.0$ $0.0$ $4$ $6 \frac{90\mu_{122}}{1052}$ $1.35$ $0.0$ $0.0$	(10.) 5	1		X		
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# **Login Sample Receipt Checklist**

Client: Crain Environmental

Job Number: 880-20129-1

SDG Number: Lea Co., NM

Login Number: 20129 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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# **ANALYTICAL REPORT**

**Eurofins Midland** 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-20350-1

Laboratory Sample Delivery Group: Lea Co., NM

Client Project/Site: Flying M SA #2

For:

Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Attn: Cindy Crain

CRAMER

Authorized for release by: 10/19/2022 10:12:59 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Crain Environmental

Project/Site: Flying M SA #2

Laboratory Job ID: 880-20350-1

SDG: Lea Co., NM

# **Table of Contents**

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### **Definitions/Glossary**

Job ID: 880-20350-1 Client: Crain Environmental Project/Site: Flying M SA #2 SDG: Lea Co., NM

**Qualifiers** 

**GC VOA** Qualifier **Qualifier Description** 

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

S1+ Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery

CFL Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

DFR Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present PQL Practical Quantitation Limit

**PRES** Presumptive QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF TEQ Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-20350-1

SDG: Lea Co., NM

Job ID: 880-20350-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-20350-1

#### Receipt

The samples were received on  $10/13/2022\ 1:35\ PM$ . Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was  $5.4^{\circ}C$ 

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: MW-6 (880-20350-1), MW-6 (0-1') (880-20350-2), MW-6 (5') (880-20350-3), MW-6 (10') (880-20350-4), MW-6 (15') (880-20350-5), MW-6 (20') (880-20350-6), MW-6 (25') (880-20350-7), MW-5 (0-1') (880-20350-8), MW-5 (5') (880-20350-9), MW-5 (10') (880-20350-10), MW-5 (15') (880-20350-11), MW-5 (20') (880-20350-12) and MW-5 (25') (880-20350-13).

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC Semi VOA

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-37209 and analytical batch 880-37194 was outside the upper control limits.

Method 8015MOD\_NM: The method blank for preparation batch 880-37209 and analytical batch 880-37194 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20350-1 SDG: Lea Co., NM

Lab Sample ID: 880-20350-1

**Matrix: Water** 

**Client Sample ID: MW-6** 

Date Collected: 10/11/22 10:20 Date Received: 10/13/22 13:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.000408	U	0.00200	0.000408	mg/L			10/14/22 18:46	
Toluene	0.000598	J	0.00200	0.000367	mg/L			10/14/22 18:46	
Ethylbenzene	<0.000657	U	0.00200	0.000657	mg/L			10/14/22 18:46	
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			10/14/22 18:46	
o-Xylene	<0.000642	U	0.00200	0.000642	mg/L			10/14/22 18:46	
Xylenes, Total	<0.000642	U	0.00400	0.000642	mg/L			10/14/22 18:46	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	98		70 - 130					10/14/22 18:46	
1,4-Difluorobenzene (Surr)	98		70 - 130					10/14/22 18:46	
Method: TAL SOP Total BTEX - T Analyte	Result	Qualifier	RL		Unit	<u>D</u>	Prepared	Analyzed 10/17/22 10:10	Dil Fa
Iotal BTEX	< 0.000657	U	0.00400	0.000657	mg/L			10/11/22 10.10	
Total BTEX	<0.000037	U	0.00400	0.000657	mg/L			10/1//22 10.10	
iotal BTEX : : Method: SW846 8015 NM - Diese				0.000037	mg/L			10/11/22 10:10	
	l Range Organ				Unit Unit	<u>D</u>	Prepared	Analyzed	
: Method: SW846 8015 NM - Diese	l Range Organ	ics (DRO) (	GC)		Unit	<u>D</u>	Prepared		Dil Fac
Method: SW846 8015 NM - Diese Analyte	Range Organ Result <0.904	ics (DRO) (Control of the Control of	GC)  RL  4.57	MDL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fa
Method: SW846 8015 NM - Diese Analyte Total TPH	Range Organ Result <0.904 sel Range Organ	ics (DRO) (Control of the Control of	GC)  RL  4.57	MDL 0.904	Unit	<u>D</u>	Prepared Prepared	Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies	Range Organ Result <0.904 sel Range Organ	ics (DRO) ((Qualifier Unics (DRO)) Qualifier	RL 4.57	MDL 0.904	Unit mg/L Unit		<u> </u>	Analyzed 10/19/22 10:15	Dil Fa
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	Range Organ Result <0.904 sel Range Orga Result	ics (DRO) (( Qualifier U  nics (DRO) Qualifier U	(GC)	MDL 0.904	Unit mg/L  Unit mg/L		Prepared	Analyzed 10/19/22 10:15 Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result Result colored Result Result Result <0.904	ics (DRO) (( Qualifier U  nics (DRO) Qualifier U	GC)  RL  4.57  (GC)  RL  4.57  4.57	MDL 0.904 MDL 0.904	Unit mg/L  Unit mg/L  mg/L		Prepared 10/18/22 17:00 10/18/22 17:00	Analyzed 10/19/22 10:15  Analyzed 10/19/22 08:42 10/19/22 08:42	Dil Fa
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <a href="#">&lt;0.904</a> Result <a href="#">&lt;0.904</a> Result <a href="#">&lt;0.904</a>	ics (DRO) (( Qualifier U  nics (DRO) Qualifier U	(GC)  RL  4.57  RL  4.57	MDL 0.904	Unit mg/L  Unit mg/L  mg/L		Prepared 10/18/22 17:00	Analyzed 10/19/22 10:15  Analyzed 10/19/22 08:42	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result Result colored Result Result Result <0.904	ics (DRO) (( Qualifier U  nics (DRO) Qualifier U  U	GC)  RL  4.57  (GC)  RL  4.57  4.57	MDL 0.904 MDL 0.904	Unit mg/L  Unit mg/L  mg/L		Prepared 10/18/22 17:00 10/18/22 17:00	Analyzed 10/19/22 10:15  Analyzed 10/19/22 08:42 10/19/22 08:42	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result Result colored Result colored Result colored <p< td=""><td>ics (DRO) (( Qualifier U  nics (DRO) Qualifier U  U</td><td>GC)  RL  4.57  (GC)  RL  4.57  4.57</td><td>MDL 0.904 MDL 0.904</td><td>Unit mg/L  Unit mg/L  mg/L</td><td></td><td>Prepared 10/18/22 17:00 10/18/22 17:00 10/18/22 17:00</td><td>Analyzed 10/19/22 10:15  Analyzed 10/19/22 08:42 10/19/22 08:42 10/19/22 08:42</td><td>Dil Fac</td></p<>	ics (DRO) (( Qualifier U  nics (DRO) Qualifier U  U	GC)  RL  4.57  (GC)  RL  4.57  4.57	MDL 0.904 MDL 0.904	Unit mg/L  Unit mg/L  mg/L		Prepared 10/18/22 17:00 10/18/22 17:00 10/18/22 17:00	Analyzed 10/19/22 10:15  Analyzed 10/19/22 08:42 10/19/22 08:42 10/19/22 08:42	Dil Fac

Client Sample ID: MW-6 (0-1')

Date Collected: 10/07/22 16:50 Date Received: 10/13/22 13:35

Sample Depth: 0-1'

Analyte

Chloride

Method: MCAWW 300.0 - Anions, Id	on Chromato	graphy - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.6		4.99	0.394	mg/Kg			10/16/22 12:28	1

RL

0.500

MDL Unit

0.346 mg/L

D

Prepared

Analyzed

10/13/22 22:33

Lab Sample ID: 880-20350-2

Dil Fac

**Matrix: Solid** 

Result Qualifier

28.5

Client Sample ID: MW-6 (5') Lab Sample ID: 880-20350-3 Date Collected: 10/07/22 16:55 **Matrix: Solid** 

Date Received: 10/13/22 13:35 Sample Depth: 5'

Method: MCAWW 300.0 - Anions	, Ion Chromatography - Sol	uble					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.0	5.05	0.399 mg/Kg			10/16/22 12:33	1

Job ID: 880-20350-1 SDG: Lea Co., NM

Client: Crain Environmental Project/Site: Flying M SA #2

Lab Sample ID: 880-20350-4

Date Collected: 10/07/22 17:05 Date Received: 10/13/22 13:35

Client Sample ID: MW-6 (10')

Matrix: Solid

**Matrix: Solid** 

Sample Depth: 10'

Method: MCAWW 300.0 - Anions, le	Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.4		5.02	0.397	mg/Kg			10/16/22 12:38	1

Client Sample ID: MW-5 (0-1') Lab Sample ID: 880-20350-8

Date Collected: 10/06/22 13:00 **Matrix: Solid** 

Date Received: 10/13/22 13:35

Sample Depth: 0-1'

Method: MCAWW 300.0 - Anions, lo	on Chromato	graphy - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.9		4.99	0.394	mg/Kg			10/16/22 12:43	1

Client Sample ID: MW-5 (5') Lab Sample ID: 880-20350-9 **Matrix: Solid** 

Date Collected: 10/06/22 13:05 Date Received: 10/13/22 13:35

Sample Depth: 5'

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.1		4.97	0.393	mg/Kg			10/16/22 12:47	1

Client Sample ID: MW-5 (10') Lab Sample ID: 880-20350-10

Date Collected: 10/06/22 13:15 Date Received: 10/13/22 13:35

Sample Depth: 10'

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	113		5.02	0.397	mg/Kg			10/18/22 18:25	1

# **Surrogate Summary**

Client: Crain Environmental Job ID: 880-20350-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water Prep Type: Total/NA

				Percent Surrogate Re
		BFB1	DFBZ1	-
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-20298-A-1 MS	Matrix Spike	108	96	
880-20298-A-1 MSD	Matrix Spike Duplicate	106	100	
880-20350-1	MW-6	98	98	
LCS 880-36926/3	Lab Control Sample	92	109	
LCSD 880-36926/4	Lab Control Sample Dup	87	111	
MB 880-36926/8	Method Blank	85	98	
Surrogate Legend				
BFB = 4-Bromofluoroben	zene (Surr)			
DFBZ = 1,4-Difluorobenz	ene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Water Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-20296-F-8-A MS	Matrix Spike	89	91	
880-20296-F-8-B MSD	Matrix Spike Duplicate	88	88	
880-20350-1	MW-6	92	107	
LCS 880-37209/2-A	Lab Control Sample	103	117	
LCSD 880-37209/3-A	Lab Control Sample Dup	95	108	
MB 880-37209/1-A	Method Blank	113	131 S1+	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

### QC Sample Results

Client: Crain Environmental Job ID: 880-20350-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36926/8

**Matrix: Water** Analysis Batch: 36926 Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000408	U	0.00200	0.000408	mg/L			10/14/22 11:01	1
Toluene	< 0.000367	U	0.00200	0.000367	mg/L			10/14/22 11:01	1
Ethylbenzene	<0.000657	U	0.00200	0.000657	mg/L			10/14/22 11:01	1
m-Xylene & p-Xylene	<0.000629	U	0.00400	0.000629	mg/L			10/14/22 11:01	1
o-Xylene	< 0.000642	U	0.00200	0.000642	mg/L			10/14/22 11:01	1
Xylenes, Total	< 0.000642	U	0.00400	0.000642	mg/L			10/14/22 11:01	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130		10/14/22 11:01	1
1,4-Difluorobenzene (Surr)	98		70 - 130		10/14/22 11:01	1

Lab Sample ID: LCS 880-36926/3

**Matrix: Water** 

**Analysis Batch: 36926** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

LCS LCS %Rec Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1083 mg/L 108 70 - 130 Toluene 0.100 0.09381 mg/L 94 70 - 130 Ethylbenzene 0.100 0.08813 mg/L 88 70 - 130 70 - 130 m-Xylene & p-Xylene 0.200 0.1798 mg/L 90 0.100 o-Xylene 0.08784 mg/L 88 70 - 130

Spike

Added

0.100

0.100

0.100

0.200

0.100

Spike

Added

0.100

0.100

LCSD LCSD

MS MS

0.1085

0.1033

Result Qualifier

0.1068

0.09102

0.08473

0.1711

0.08371

Result Qualifier

mg/L

mg/L

Unit

mg/L

mg/L

LCS LCS

Sample Sample

<0.000408 U

0.000719 J

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 880-36926/4

**Matrix: Water** 

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene m-Xylene & p-Xylene

Analysis Batch: 36926

<b>Client Sample ID:</b>	Lab Control Sample Dup
	Prep Type: Total/NA

RPD %Rec Unit %Rec Limits Limit mg/L 107 70 - 130 20 mg/L 91 70 - 130 3 20 mg/L 85 70 - 130 20

70 - 130

70 - 130

86

103

LCSD LCSD %Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 87 70 - 130 1,4-Difluorobenzene (Surr) 111 70 - 130

Lab Sample ID: 880-20298-A-1 MS

**Matrix: Water** 

Analyte

Benzene

Toluene

**Analysis Batch: 36926** 

Client Sample ID: Matrix Spike Prep Type: Total/NA

%Rec %Rec Limits 108 70 - 130

70 - 130

**Eurofins Midland** 

20

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20350-1 SDG: Lea Co., NM

### Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-20298-A-1 MS

**Matrix: Water** 

Analysis Batch: 36926

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Sampl	e Sample	Spike	MS	MS				%Rec
Analyte Resu	t Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylbenzene <0.00065	7 U	0.100	0.1007		mg/L		101	70 - 130
m-Xylene & p-Xylene 0.0014	) J	0.200	0.2135		mg/L		106	70 - 130
o-Xylene 0.0014	2 J	0.100	0.1054		mg/L		104	70 - 130
	-	*****						

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 36926

Lab Sample ID: 880-20298-A-1 MSD

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 0.100 Benzene <0.000408 U 0.1123 mg/L 112 70 - 130 3 25 Toluene 0.000719 J 0.1065 106 70 - 130 0.100 mg/L 3 25 Ethylbenzene <0.000657 U 0.100 0.1038 104 70 - 130 3 25 mg/L 0.00140 J 0.200 0.2155 107 70 - 130 25 m-Xylene & p-Xylene mg/L 0.100 0.00142 J 0.1080 70 - 130 2 o-Xylene mg/L 107

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

### Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-37209/1-A

**Matrix: Water** 

Analysis Batch: 37194

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 37209

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	2.263	J	4.55	0.898	mg/L		10/18/22 10:08	10/18/22 11:15	1
Diesel Range Organics (Over C10-C28)	1.319	J	4.55	0.898	mg/L		10/18/22 10:08	10/18/22 11:15	1
Oll Range Organics (Over C28-C36)	<0.867	U	4.55	0.867	mg/L		10/18/22 10:08	10/18/22 11:15	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	10/18/22 10:08	10/18/22 11:15	1
o-Terphenyl	131	S1+	70 - 130	10/18/22 10:08	10/18/22 11:15	1

Lab Sample ID: LCS 880-37209/2-A

**Matrix: Water** 

Analysis Batch: 37194

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 37209

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	90.4	90.37		mg/L		100	75 - 125
(GRO)-C6-C10							
Diesel Range Organics (Over	90.4	91.17		mg/L		101	75 - 125
C10-C28)							

Job ID: 880-20350-1

SDG: Lea Co., NM

### Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-37209/2-A

Lab Sample ID: LCSD 880-37209/3-A

Lab Sample ID: 880-20296-F-8-A MS

**Matrix: Water** 

**Matrix: Water** 

Analysis Batch: 37194

Diesel Range Organics (Over

Client: Crain Environmental

Project/Site: Flying M SA #2

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37209

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 103 70 - 130 o-Terphenyl 117 70 - 130

Client Sample ID: Lab Control Sample Dup

75 - 125

94

Prep Type: Total/NA

Prep Batch: 37209

Analysis Batch: 37194 Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 90.6 85.33 94 75 - 125 6 20 Gasoline Range Organics mg/L (GRO)-C6-C10

85.39

mg/L

90.6

C10-C28)

**Matrix: Water** 

**Analysis Batch: 37194** 

LCSD LCSD

Surrogate %Recovery Qualifier Limits 95 70 - 130 1-Chlorooctane 108 70 - 130 o-Terphenyl

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 37209

MS MS Sample Sample Spike Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics < 0.904 U F1 91.2 91.52 mg/L 100 75 - 125 (GRO)-C6-C10 Diesel Range Organics (Over <0.904 UF1 91.2 77.49 mg/L 85 75 - 125

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 89 o-Terphenyl 91 70 - 130

Lab Sample ID: 880-20296-F-8-B MSD Client Sample ID: Matrix Spike Duplicate

Analysis Batch: 37194

**Matrix: Water** 

Prep Type: Total/NA

Prep Batch: 37209

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit U F1 91.5 86.99 95 Gasoline Range Organics < 0.904 75 - 125 5 20 mg/L (GRO)-C6-C10 Diesel Range Organics (Over <0.904 UF1 91.5 75.07 mg/L 82 75 - 125 3 20 C10-C28)

MSD MSD

Qualifier Surrogate %Recovery Limits 1-Chlorooctane 88 70 - 130 88 70 - 130 o-Terphenyl

**Eurofins Midland** 

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Job ID: 880-20350-1 SDG: Lea Co., NM

Client: Crain Environmental Project/Site: Flying M SA #2

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36899/3

**Matrix: Water** 

Analysis Batch: 36899

MB MB

Analyte Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac Chloride <0.346 U 0.500 0.346 mg/L 10/13/22 19:52

Lab Sample ID: LCS 880-36899/4

**Matrix: Water** 

**Analysis Batch: 36899** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 25.0 25.90 mg/L 104 90 - 110

Lab Sample ID: LCSD 880-36899/5

**Matrix: Water** 

Analysis Batch: 36899

Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 25.0 26.03 mg/L 104 90 - 110

Lab Sample ID: 880-20312-A-1 MS

**Matrix: Water** 

**Analysis Batch: 36899** 

MS MS Spike %Rec Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Chloride 12.6 25.0 38.28 103 90 - 110 mg/L

Lab Sample ID: 880-20312-A-1 MSD

**Matrix: Water** 

Analysis Batch: 36899

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 12.6 25.0 38.39 mg/L 103 90 - 110

Lab Sample ID: MB 880-36935/1-A

Matrix: Solid

**Analysis Batch: 37026** 

мв мв

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Chloride <0.395 U 5.00 0.395 mg/Kg 10/16/22 10:22

Lab Sample ID: LCS 880-36935/2-A

**Matrix: Solid** 

**Analysis Batch: 37026** 

LCS LCS %Rec Spike Added Result Qualifier Limits Analyte Unit %Rec Chloride 250 251.9 mg/Kg 101 90 - 110

Lab Sample ID: LCSD 880-36935/3-A

**Matrix: Solid** 

**Analysis Batch: 37026** 

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 250 249.2 mg/Kg 100 90 - 110 20

**Eurofins Midland** 

Released to Imaging: 1/15/2025 3:53:49 PM

Dil Fac

Job ID: 880-20350-1

Client: Crain Environmental Project/Site: Flying M SA #2

SDG: Lea Co., NM

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Lab Control Sample Dup

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 890-3197-A-7-B MS

**Matrix: Solid** 

Analysis Batch: 37026

Analysis Batom 67020										
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	1050		1240	2312		mg/Kg		102	90 - 110	

Lab Sample ID: 890-3197-A-7-C MSD

**Matrix: Solid** 

**Analysis Batch: 37026** 

-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	1050		1240	2300		mg/Kg		101	90 - 110	1	20

Lab Sample ID: MB 880-36932/1-A

**Matrix: Solid** 

Analysis Batch: 37029

мв мв

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395 U	5.00	0.395 mg/Kg			10/18/22 15:59	1

Lab Sample ID: LCS 880-36932/2-A

**Matrix: Solid** 

**Analysis Batch: 37029** 

	<b>Бріке</b>	LUS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	242.3		mg/Kg		97	90 - 110	

Lab Sample ID: LCSD 880-36932/3-A

**Matrix: Solid** 

Analysis Batch: 37029

	Spike	LCSD	LCSD				/ortec		KFD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	241.7		mg/Kg		97	90 - 110	0	20	

Lab Sample ID: 880-20339-A-11-B MS

**Matrix: Solid** 

**Analysis Batch: 37029** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	155		251	399.9		ma/Ka		98	90 - 110	

Lab Sample ID: 880-20339-A-11-C MSD

**Matrix: Solid** 

Analysis Batch: 37029

7 maryoro Batom or ozo												
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	155		251	401.6		mg/Kg		99	90 - 110	0	20	

# **QC Association Summary**

Client: Crain Environmental Job ID: 880-20350-1 Project/Site: Flying M SA #2

SDG: Lea Co., NM

**GC VOA** 

Analysis Batch: 36926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-1	MW-6	Total/NA	Water	8021B	
MB 880-36926/8	Method Blank	Total/NA	Water	8021B	
LCS 880-36926/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-36926/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-20298-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
880-20298-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

**Analysis Batch: 37116** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-1	MW-6	Total/NA	Water	Total BTEX	

**GC Semi VOA** 

Analysis Batch: 37194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-1	MW-6	Total/NA	Water	8015B NM	37209
MB 880-37209/1-A	Method Blank	Total/NA	Water	8015B NM	37209
LCS 880-37209/2-A	Lab Control Sample	Total/NA	Water	8015B NM	37209
LCSD 880-37209/3-A	Lab Control Sample Dup	Total/NA	Water	8015B NM	37209
880-20296-F-8-A MS	Matrix Spike	Total/NA	Water	8015B NM	37209
880-20296-F-8-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015B NM	37209

Prep Batch: 37209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
880-20350-1	MW-6	Total/NA	Water	8015NM Aq Prep
MB 880-37209/1-A	Method Blank	Total/NA	Water	8015NM Aq Prep
LCS 880-37209/2-A	Lab Control Sample	Total/NA	Water	8015NM Aq Prep
LCSD 880-37209/3-A	Lab Control Sample Dup	Total/NA	Water	8015NM Aq Prep
880-20296-F-8-A MS	Matrix Spike	Total/NA	Water	8015NM Aq Prep
880-20296-F-8-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015NM Aq Prep

Analysis Batch: 37294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-1	MW-6	Total/NA	Water	8015 NM	

HPLC/IC

Analysis Batch: 36899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-1	MW-6	Total/NA	Water	300.0	
MB 880-36899/3	Method Blank	Total/NA	Water	300.0	
LCS 880-36899/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-36899/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-20312-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-20312-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Leach Batch: 36932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-10	MW-5 (10')	Soluble	Solid	DI Leach	
MB 880-36932/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36932/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36932/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

# **QC Association Summary**

Client: Crain Environmental
Project/Site: Flying M SA #2
S

Job ID: 880-20350-1 SDG: Lea Co., NM

## 2

# HPLC/IC (Continued)

Leach	Batch:	36932	(Continued)	

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20339-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-20339-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Leach Batch: 36935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-2	MW-6 (0-1')	Soluble	Solid	DI Leach	
880-20350-3	MW-6 (5')	Soluble	Solid	DI Leach	
880-20350-4	MW-6 (10')	Soluble	Solid	DI Leach	
880-20350-8	MW-5 (0-1')	Soluble	Solid	DI Leach	
880-20350-9	MW-5 (5')	Soluble	Solid	DI Leach	
MB 880-36935/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36935/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36935/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3197-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3197-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### **Analysis Batch: 37026**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-2	MW-6 (0-1')	Soluble	Solid	300.0	36935
880-20350-3	MW-6 (5')	Soluble	Solid	300.0	36935
880-20350-4	MW-6 (10')	Soluble	Solid	300.0	36935
880-20350-8	MW-5 (0-1')	Soluble	Solid	300.0	36935
880-20350-9	MW-5 (5')	Soluble	Solid	300.0	36935
MB 880-36935/1-A	Method Blank	Soluble	Solid	300.0	36935
LCS 880-36935/2-A	Lab Control Sample	Soluble	Solid	300.0	36935
LCSD 880-36935/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36935
890-3197-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	36935
890-3197-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36935

#### **Analysis Batch: 37029**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-20350-10	MW-5 (10')	Soluble	Solid	300.0	36932
MB 880-36932/1-A	Method Blank	Soluble	Solid	300.0	36932
LCS 880-36932/2-A	Lab Control Sample	Soluble	Solid	300.0	36932
LCSD 880-36932/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36932
880-20339-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	36932
880-20339-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36932

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-20350-1 SDG: Lea Co., NM

**Client Sample ID: MW-6** Lab Sample ID: 880-20350-1 Date Collected: 10/11/22 10:20

**Matrix: Water** 

Date Received: 10/13/22 13:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	36926	10/14/22 18:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37116	10/17/22 10:10	AJ	EET MID
Total/NA	Analysis	8015 NM		1			37294	10/19/22 10:15	SM	EET MID
Total/NA	Prep	8015NM Aq Prep			32.8 mL	3 mL	37209	10/18/22 17:00	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37194	10/19/22 08:42	SM	EET MID
Total/NA	Analysis	300.0		1			36899	10/13/22 22:33	СН	EET MID

Client Sample ID: MW-6 (0-1') Lab Sample ID: 880-20350-2

Date Collected: 10/07/22 16:50 **Matrix: Solid** 

Date Received: 10/13/22 13:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	36935	10/14/22 08:56	KS	EET MID
Soluble	Analysis	300.0		1			37026	10/16/22 12:28	CH	EET MID

Client Sample ID: MW-6 (5') Lab Sample ID: 880-20350-3 Matrix: Solid

Date Collected: 10/07/22 16:55

Date Received: 10/13/22 13:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	36935	10/14/22 08:56	KS	EET MID
Soluble	Analysis	300.0		1			37026	10/16/22 12:33	CH	EET MID

Client Sample ID: MW-6 (10') Lab Sample ID: 880-20350-4 **Matrix: Solid** 

Date Collected: 10/07/22 17:05 Date Received: 10/13/22 13:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	36935	10/14/22 08:56	KS	EET MID
Soluble	Analysis	300.0		1			37026	10/16/22 12:38	CH	EET MID

Client Sample ID: MW-5 (0-1') Lab Sample ID: 880-20350-8

Date Collected: 10/06/22 13:00 Date Received: 10/13/22 13:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	36935	10/14/22 08:56	KS	EET MID
Soluble	Analysis	300.0		1			37026	10/16/22 12:43	CH	EET MID

Client Sample ID: MW-5 (5') Lab Sample ID: 880-20350-9

Date Collected: 10/06/22 13:05 Date Received: 10/13/22 13:35

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	36935	10/14/22 08:56	KS	EET MID
Soluble	Analysis	300.0		1			37026	10/16/22 12:47	CH	EET MID

**Eurofins Midland** 

**Matrix: Solid** 

**Matrix: Solid** 

### **Lab Chronicle**

Client: Crain Environmental Job ID: 880-20350-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

Client Sample ID: MW-5 (10') Lab Sample ID: 880-20350-10

Date Collected: 10/06/22 13:15 Matrix: Solid Date Received: 10/13/22 13:35

Batch Batch Dil Initial Final Batch Prepared Method Prep Type Туре Run Factor Amount Amount Number or Analyzed Analyst Lab 10/14/22 08:52 DI Leach 36932 KS EET MID Soluble Leach 4.98 g 50 mL 300.0 EET MID Soluble Analysis 1 37029 10/18/22 18:25 СН

#### **Laboratory References:**

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-20350-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

### **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	F	Program	Identification Number	Expiration Date
exas	NELAP		T104704400-22-24	06-30-23
The following analytes the agency does not of	•	out the laboratory is not certif	ed by the governing authority. This list ma	ay include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	
Analysis Method 300.0	Prep Method	Matrix Water	Analyte Chloride	
	Prep Method			

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### **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-20350-1

SDG: Lea Co., NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	MCAWW	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Aq Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

#### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

**Eurofins Midland** 

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Client Sample ID

MW-6

MW-6 (0-1')

MW-6 (5')

MW-6 (10')

MW-5 (0-1')

MW-5 (5')

MW-5 (10')

## **Sample Summary**

Collected

10/11/22 10:20

10/07/22 16:50

10/07/22 16:55

10/07/22 17:05

10/06/22 13:00

10/06/22 13:05

10/06/22 13:15

10/13/22 13:35

10/13/22 13:35

10/13/22 13:35

0-1'

5'

Matrix

Water

Solid

Solid

Solid

Solid

Solid

Solid

Client: Crain Environmental Project/Site: Flying M SA #2

Lab Sample ID

880-20350-1

880-20350-2

880-20350-3

880-20350-4

880-20350-8

880-20350-9

880-20350-10

Job ID: 880-20350-1

SDG: Lea Co., NM

Received	Depth
10/13/22 13:35	
10/13/22 13:35	0-1'
10/13/22 13:35	5'
10/13/22 13:35	10'

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Page\_

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880-20350 Chain of Custody

Revised Date: 08/25/2020 Rev. 2020.2

Date/Time

Chain of Custody

Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334 Hobbs, NM (575) 392 7550, Carlsbad, NM (575) 988-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 EL Paso TX (915) 585-3443 Lubbock, TX (806) 794-1296

eurofis Services

Project Manager	Cindy Crain		Bill to: (if different)	Leasa Hair	Work Order Comments	smments
Company Name:	Crain Cruiman mental	mental	Company Name:	Southwest Roughing	Program: UST/PST   PRP   Brownfields   RBC	wnfields   Superfund
Address:	2925 E. 17th	Ŕ	Address.	P.O. Box 53570	ా	
City, State ZIP-	Odess, TX	79761	City, State ZIP-	Midland, TX 79710	Reporting Level    Level      PST/UST    TRRP    Level	ST/UST TRRP Level IV
Phone:	(575) 441-7244	4 Email.	~	indy. Crain@ amail. com	Deliverables EDD ADal	ADaPT Other
Project Name	Flying M SA	#2 Tur	Turn Around		ANALYSIS REOUEST	Presentative Codes
Project Number		Routine	ų,	Pres.		None NO
Project Location	Lea Co. NM	Due Date:				
er's Name:	Circly Crain	TAT starts th	TAT starts the day received by			
# Od	,	the lab, if re	the lab, if received by 4.30pm	į.		
SAMPLE RECEIPT	Temperaturk.	Yek No Wet Ice:	Yes	stoji		
Samples Received Intact:	t Wes Xo	ē	100			113F O 4 1F
Cooler Custody Seals:	Yes No	Correction Factor		-,-		NaHSO 4 NABIS
Sample Custody Seals.	Yes No X	Temperature Reading	78	AP.		N4252U3 N45U 3
Total Containers:		Corrected Temperature	ئ 2:	1 X 3		Ln Acetate+NaOH Ln NaOH±Ascorbic Acid SADC
		4.00	_	7_		ואפטון דאזכטוטור אכום אחר
Sample Identification	cation Matrix	Date Time Sampled Sampled	Depth Grab/#	Cont B		Sample Comments
MW-6	<b>%</b> 9	10/11/22 1020	1	XX		
MW-6 (0	0-1) 5	10/7/22 1650	2 ,1.0	X		
MW-6	5.) 6	1655		X		
) 9-MH	10.) 5	2071		X		
7	15') 5	V 1720	5,			HOLD
7		10/8/22 0945	20'	/		Ногр
7	25.) 5	₩ 0958	25' 6			HOLD
٦	5 (.1.0	7	0-1'	X		tec
MW-5	5.) 5	10/6/22 1305	5. C	X		The state of the s
/ C-MM	(101)   5	3/2/20191	10,	X		

ed to kach project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated Volce: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of saypible, and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control Relinquished by: (Signature) Date/Time Received by: (Signature) Eurofins Xenco. A minimum charge of \$85.00 will be appl Relinguished by, (Signature)

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Tl Sn U V Zn

TCLP/SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U

Circle Method(s) and Metal(s) to be analyzed

200.8 / 6020:

Total 200.7 / 6010

Hg 1631 / 245 1 / 7470 / 7471

Received by: (Signature)				
Relinquished by: (Signature)	2	7	9	1777
Date/Time	AC 10113122	, 1835		
Received by: (Signature)				
ned by: (Signature)	See			

Revised Date: 08/25/2020 Rev. 2020.2

Date/Time

Chain of Custody

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 Hobbs, NM (575) 392-7550 Carlsbad, NM (575) 988-3199 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Envionnent Testing

Curofins Curofins

Xenco

Work Order No: \_

						***************************************		-				www.xe	www.xenco com Pa	Page 2	of of
Project Manager	Cindy Crain	ج ا			Bill to: (if	to: (if different)		Leasa Hale	Hale			Work	Work Order Comments		
Company Name:	Gain Chirconnental	ron	ental		Company Name	Name.		SWR			Program.	UST/PST   PRP		Brownfields RRC	Superfund
Address.	2925 E. I	五	J		Address:		P.0	P.O. Box 53570	53570		Ğ	M N		]	
City, State ZIP-	Odessa .	TX 7976	1976		City, State ZIP	ZIP.	H.	Hidland TX 79710	7X 79	710	Reporting L	evel II 🗌 Leve	Reporting Level III Level III PST/UST TRRP Level IV	- TRRP	] Level IV
Phone.	575) 441-7244	7244		Email	Ü	dy. C	ain @	Cirdy. Crain @ amail. com	٤		Deliverables	EDD	ADaPT 🗌	Other:	
Project Name F	Flying M SA	# ∀	8	Turn	Turn Around					ANALYSIS REOUEST	OUEST		Δ	Presentative Codes	Codec
Project Number	<u> </u>			MRoutine	Rush		Pres.						CN encN	מואכ	DI Water H O
Project Location	-ea Co., NM	I		Due Date:									Social Property		MACH MA
Sampler's Name:	Cindy Crain	ح		TAT starts the day	day received by	d by							CH CH	5	INICOL INIC
PO#				the lab, if received by 4:30pm	eived by 4:3								, I	ļ	Na CH Na
SAMPLE RECEIPT	Temp Blank:		Yes No	Wet Ice	Yes No	Ī	sters						H. DO HD		BN COR
Samples Received Intact:	Yes No	The	Thermometer ID-	ė			SILIP						NaHCN	Name of the Name o	
Cooler Custody Seals:	Yes No N/A		Correction Factor	ctor			Lei		<del>,</del>				S.eN	Na.S.O. Naso.	
Sample Custody Seals.	Yes No N/A		Temperature Reading	Reading			Q						7 27 a Z	7n Acetate+NaOH 7n	7,
Total Containers.		Ō	rected Te	Corrected Temperature:			77						-HOEN	ZII ACEGGETINAON ZII NAOH+Ascorhic Acid SAPC	ZII Id SAPC
			Date	Two		grah/	01								
Sample Identification		Matrix Sa	Sampled	Ŋ.	Depth									Sample Comments	ıments
MW-5 (15.			CC/19/01	1325	2	2	X								
MW-5 (20.	(	<u>a</u> S	27/1/al	1230	20'	ว	X								*
MW-5 (25.	_	ļ.	CE/L/01	1240	.56	2	X							Loc: 880	
														20350	
														,	
77777													***************************************		
													7		***************************************
Total 200.7 / 6010	200.8 / 6020:		88	8RCRA 13PPM		s 11 Al	Sb As Ba	Be B Cd	Ca Cr Cc	Cu Fe Pb	Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mg Ni K Se Ag SiQ. Na Sr Tl Sn II V Zn	Se An SiO	Na Sr TI Sn	11 V Zn	
Circle Method(s) and Metal(s) to be analyzed	Metal(s) to be	analyze		TCLP / SPLP		8RCRA	Sb As E	a Be Cd C	r Co Cu	Pb Mn Mo	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Ha 163	Ha 1631 / 245 1 / 7470 / 7471	/7471	
					***************************************	-						9	2		

of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated. Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control

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	2	10/13/17/2		ing, lian
Received by (Signature)	Relinquished by (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)

### **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-20350-1 SDG Number: Lea Co., NM

Login Number: 20350 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Cindy Crain Crain Environmental 2925 E. 17th St. Odessa Texas 79761

Generated 11/17/2022 1:09:28 PM

# **JOB DESCRIPTION**

Flying M SA #2 SDG NUMBER Lea Co, NM

# **JOB NUMBER**

880-21500-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701



Client: Crain Environmental
Project/Site: Flying M SA #2

Laboratory Job ID: 880-21500-1
SDG: Lea Co, NM

# **Table of Contents**

Cover Page	1
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QC Association Summary	7
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Sample Summary	11
Chain of Custody	12
Receipt Checklists	13
Appendix	14

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# **Definitions/Glossary**

Client: Crain Environmental Job ID: 880-21500-1 SDG: Lea Co, NM Project/Site: Flying M SA #2

### **Qualifiers**

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Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

O	indicates the analyte was analyzed for but not detected.
Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MOI	Method Overtitation Limit

MQL Method Quantitation Limit NC

Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Negative / Absent NEG POS Positive / Present PQL Practical Quantitation Limit

**PRES** Presumptive **Quality Control** QC

Relative Error Ratio (Radiochemistry) RER

RL Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points RPD

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

TNTC Too Numerous To Count

### **Case Narrative**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-21500-1

SDG: Lea Co, NM

Job ID: 880-21500-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-21500-1

#### Receipt

The sample was received on 11/14/2022 8:03 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-39756 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# **Client Sample Results**

Client: Crain Environmental Job ID: 880-21500-1
Project/Site: Flying M SA #2 SDG: Lea Co, NM

Client Sample ID: MW-6

Lab Sample ID: 880-21500-1

Date Collected: 11/10/22 14:25
Date Received: 11/14/22 08:03
Matrix: Water

 Method: MCAWW 300.0 - Anions, Ion Chromatography
 Analyte
 Result Chloride
 Qualifier Qualifier
 RL Result Plant
 MDL Unit Plant
 D Prepared Prepared
 Analyzed Analyzed Plant
 Dil Fac Plant

 Chloride
 1910
 F1
 25.0
 17.3 mg/L
 11/16/22 23:00
 50

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0

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Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-21500-1

Prep Type: Total/NA

Client Sample ID: MW-6

Client Sample ID: MW-6

Prep Type: Total/NA

Prep Type: Total/NA

SDG: Lea Co, NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-39756/3

**Matrix: Water** 

Analysis Batch: 39756

Client Sample ID: Method Blank Prep Type: Total/NA

мв мв

Dil Fac Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Chloride <0.346 U 0.500 0.346 mg/L 11/16/22 22:38

Lab Sample ID: LCS 880-39756/4 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 39756** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits

Chloride 25.0 25.65 mg/L 103 90 - 110

Lab Sample ID: LCSD 880-39756/5 Client Sample ID: Lab Control Sample Dup

**Matrix: Water** 

Analysis Batch: 39756

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 25.0 25.68 103 90 - 110 mg/L

Lab Sample ID: 880-21500-1 MS

**Matrix: Water** 

Analysis Batch: 39756

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 1250 4322 F1 Chloride 1910 F1 193 90 - 110 mg/L

Lab Sample ID: 880-21500-1 MSD

**Matrix: Water** 

Analysis Batch: 39756

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 1910 F1 1250 4335 F1 mg/L 194 90 - 110 0 20

# **QC Association Summary**

Client: Crain Environmental
Project/Site: Flying M SA #2
Job ID: 880-21500-1
SDG: Lea Co, NM

### HPLC/IC

### Analysis Batch: 39756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-21500-1	MW-6	Total/NA	Water	300.0	
MB 880-39756/3	Method Blank	Total/NA	Water	300.0	
LCS 880-39756/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-39756/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-21500-1 MS	MW-6	Total/NA	Water	300.0	
880-21500-1 MSD	MW-6	Total/NA	Water	300.0	

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### **Lab Chronicle**

Client: Crain Environmental Job ID: 880-21500-1 Project/Site: Flying M SA #2 SDG: Lea Co, NM

**Client Sample ID: MW-6** Lab Sample ID: 880-21500-1

Date Collected: 11/10/22 14:25 Matrix: Water Date Received: 11/14/22 08:03

Dil Batch Batch Initial Final Batch Prepared Method Prep Type Туре Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 300.0 50 39756 11/16/22 23:00 CH EET MID Analysis

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

## **Accreditation/Certification Summary**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-21500-1

SDG: Lea Co, NM

#### **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority Texas		ogram	Identification Number	<b>Expiration Date</b>
		ELAP	T104704400-22-24	06-30-23
The fellowing a contract				
The following analytes	are included in this report, bu	it the laboratory is not certif	fied by the governing authority. This list ma	ay include analytes for v
the agency does not of	· '	It the laboratory is not certif	fied by the governing authority. This list ma	ay include analytes for v
0 ,	· '	it the laboratory is not certif  Matrix	ited by the governing authority. This list ma	ay include analytes for v

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#### **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-21500-1 SDG: Lea Co, NM

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET MID

#### **Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

#### Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

#### **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-21500-1

SDG: Lea Co, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-21500-1	MW-6	Water	11/10/22 14:25	11/14/22 08:03

Company Name:

Crain

Coviron mental

Company Name: Bill to: (if different)

P.O. Box Midlard,

53570

State of Project: NM

Program:

UST/PST PRP Brownfields RRC

Superfund [

Work Order Comments

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Bin

(300) / (310) / (300) / (3		
EL Paso TX (915) 585-3443 (116hbock TY (806) 70/	>0000	
Midland, TX (432) 704-5440 San Antonio, TX (210) 5		
Houston, TX (281) 240-4200, Dallas, TX (214) 902		
Chain of Custody		

Hobbs NM (575) 392 7550, Carlsbad, NM (575) 988-3199 94-1296 )2-0300 ) 509-3334

Work Order No:_
21500

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e) Date/Time	Received by: (Signature)	Relinquished by (Signature)	Date/Time		Received by (Signature)	nature) // Rev	Relinfquished by: (Signature)
	nditions control sly negotiated.	of service. Eurofins Xenco, will be liable only for the cost of samples constitutes a value purchase order from client company to Eurofins Xenco, its affiliates and subcontractors, it assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	urofins Xenco, its affiliates and xenses incurred by the client is to Eurofins Xenco, but not and	r from client company to E sibility for any losses or ex or each sample submitted	stitutes a valid purchase orded shall not assume any resport the project and a charge of \$5 to the project a	ble only for the cost of samples an ge of \$85.00 will be applied to eac	service. Eurofins Xenco will be lia Eurofins Xenco. A minimum char
/7470 /7471	Ag Tl U Hg 1631/2451,	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	Sb As Ba Be Cd	ICLP/SPLP6010 8KCKA	u ICLP/SI	Wife: Classing of the document and climate the definition of the deliance and climate the definition of the deliance and climate and cl	After Stemature of this document
TI Sn U V Zn	Mo Ni K Se Ag SiO <sub>2</sub> Na Sr		Sb As Ba Be B Co		8RCRA	200.8 / 6020:	Total 200.7 / 6010
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Sample Comments			= =     Ch.	Depth Grab/ # of Cont	Date Time Sampled Sampled	Matrix	Sample Identification
NaOH+Ascorbic Acid SAPC			lor.	ç.	Corrected Temperature:	Cor	lotal Containers.
Zn Acetate+NaOH Zn			ial	O Ŝ	Temperature Reading	Yes No WA Ten	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub>				V	Correction Factor	N/A	Cooler Custody Seals.
NaHSO 4 NABIS				200	Thermometer ID:		Samples Received Intact:
•				No eter	Yes (No) Wet Ice:	Temp Blank. Ye	SAMPLE RECEIPT
2			<b>3</b>	the lab, if received by 4.30pm	+		PO#
				TAT starts the day received by	TAT starts the	indy (rain	ler's Name:
					Due Date	K -	Project Location, L
None NO DI Water H <sub>2</sub> O			de is	Rush Code	<b>K</b> Routine	2	Project Number -
Preservative Codes		ANALYSIS REQUEST		Turn Around		Flying M SA # 2	Project Name
T ☐ Other	Deliverables. EDD ADaPT		crain@amail.com	cindy coa	Email	575) 441-7244	Phone
ST/UST   TRRP   Level IV	Reporting Level II Level III PST/UST	-/X /47/0   Rep.	MINIAN,	City, State ZIP	17116	100 Jan /X	Section 211
3		70710		714. Ct. t. 710.	797/1	ONORCH TO "	City, State ZIP:

#### **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-21500-1 SDG Number: Lea Co, NM

Login Number: 21500 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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# **Eurofins Midland**

#### **Job Notes**

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

#### **Authorization**

Generated 11/17/2022 1:09:28 PM

Authorized for release by Jessica Kramer, Project Manager <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440

**Environment Testing** 

# **ANALYTICAL REPORT**

#### PREPARED FOR

Attn: Cindy Crain Crain Environmental 2925 E. 17th St. Odessa, Texas 79761

Generated 3/26/2023 7:41:12 AM

## **JOB DESCRIPTION**

Flying M SA #2 SDG NUMBER Lea Co., NM

#### **JOB NUMBER**

880-25907-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701

# **Eurofins Midland**

#### **Job Notes**

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

#### **Authorization**

Generated 3/26/2023 7:41:12 AM

Authorized for release by Jessica Kramer, Project Manager <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440

Client: Crain Environmental Laboratory Job ID: 880-25907-1 Project/Site: Flying M SA #2 SDG: Lea Co., NM

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#### **Definitions/Glossary**

Client: Crain Environmental Job ID: 880-25907-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

**Qualifiers** 

HPLC/IC

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

**Eurofins Midland** 

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#### **Case Narrative**

Client: Crain Environmental

Project/Site: Flying M SA #2

Job ID: 880-25907-1

SDG: Lea Co., NM

Job ID: 880-25907-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-25907-1

#### Receipt

The samples were received on 3/14/2023 2:42 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was  $5.3^{\circ}$ C

#### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-25907-1 SDG: Lea Co., NM

Lab Sample ID: 880-25907-1

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

Client Sample ID: MW-1 Date Collected: 03/13/23 12:45

Date Received: 03/14/23 14:42

١	Method: EPA 300.0 - Anions, Ion Chromatography									
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	1330		25.0	17.3	mg/L			03/18/23 20:03	50

Client Sample ID: MW-2 Lab Sample ID: 880-25907-2 Date Collected: 03/13/23 11:05 **Matrix: Water** 

Date Received: 03/14/23 14:42

Method: EPA 300.0 - Anions, Ion Chromatography							
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	25.0	17.3 mg/L			03/18/23 20:19	50

**Client Sample ID: MW-3** Lab Sample ID: 880-25907-3

Date Collected: 03/13/23 13:30

Date Received: 03/14/23 14:42

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	207		5.00	3.46	mg/L			03/18/23 20:24	10

Client Sample ID: MW-4 Lab Sample ID: 880-25907-4 **Matrix: Water** 

Date Collected: 03/13/23 10:00

Date Received: 03/14/23 14:42

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	273		5.00	3.46	mg/L			03/18/23 20:29	10

Lab Sample ID: 880-25907-5 **Client Sample ID: MW-6** 

Date Collected: 03/13/23 14:10

Date Received: 03/14/23 14:42

Method: EPA 300.0 - Anions, Ion C	hromatography							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	234	2.50	1.73	mg/L			03/18/23 20:34	5

**Eurofins Midland** 

Client: Crain Environmental Project/Site: Flying M SA #2

Job ID: 880-25907-1

SDG: Lea Co., NM

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-48893/3

**Matrix: Water** 

Analysis Batch: 48893

Analyte

Chloride

Chloride

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Dil Fac Result Qualifier RL MDL Unit D Prepared Analyzed <0.346 U 0.500 0.346 mg/L 03/18/23 19:48

mg/L

105

90 - 110

Client Sample ID: MW-1

Client Sample ID: MW-1 Prep Type: Total/NA

Prep Type: Total/NA

Lab Sample ID: LCS 880-48893/4 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 48893** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits

25.0

Lab Sample ID: LCSD 880-48893/5 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

26.22

Analysis Batch: 48893

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 25.0 26.00 90 - 110 20 mg/L 104

Lab Sample ID: 880-25907-1 MS

**Matrix: Water** 

Analysis Batch: 48893

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Qualifier Unit %Rec Result Limits 1330 1250 Chloride 2579 100 90 - 110 mg/L

Lab Sample ID: 880-25907-1 MSD

**Matrix: Water** 

Analysis Batch: 48893

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 1250 1330 2570 mg/L 99 90 - 110 0 20

**Eurofins Midland** 

## **QC Association Summary**

Client: Crain Environmental Job ID: 880-25907-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

#### HPLC/IC

#### Analysis Batch: 48893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25907-1	MW-1	Total/NA	Water	300.0	
880-25907-2	MW-2	Total/NA	Water	300.0	
880-25907-3	MW-3	Total/NA	Water	300.0	
880-25907-4	MW-4	Total/NA	Water	300.0	
880-25907-5	MW-6	Total/NA	Water	300.0	
MB 880-48893/3	Method Blank	Total/NA	Water	300.0	
LCS 880-48893/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-48893/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-25907-1 MS	MW-1	Total/NA	Water	300.0	
880-25907-1 MSD	MW-1	Total/NA	Water	300.0	

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Client: Crain Environmental Project/Site: Flying M SA #2

Client Sample ID: MW-1 Date Collected: 03/13/23 12:45

Lab Sample ID: 880-25907-1

**Matrix: Water** 

Date Received: 03/14/23 14:42

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	300.0		50	10 mL	10 mL	48893	03/18/23 20:03	SMC	EET MID

Client Sample ID: MW-2

Lab Sample ID: 880-25907-2

**Matrix: Water** 

Date Collected: 03/13/23 11:05 Date Received: 03/14/23 14:42

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	10 mL	10 mL	48893	03/18/23 20:19	SMC	EET MID

**Client Sample ID: MW-3** Lab Sample ID: 880-25907-3

Date Collected: 03/13/23 13:30 **Matrix: Water** 

Date Received: 03/14/23 14:42

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	48893	03/18/23 20:24	SMC	EET MID

Client Sample ID: MW-4 Lab Sample ID: 880-25907-4

Date Collected: 03/13/23 10:00 **Matrix: Water** 

Date Received: 03/14/23 14:42

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	48893	03/18/23 20:29	SMC	EET MID

Lab Sample ID: 880-25907-5 **Client Sample ID: MW-6** 

Date Collected: 03/13/23 14:10

**Matrix: Water** Date Received: 03/14/23 14:42

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	10 mL	10 mL	48893	03/18/23 20:34	SMC	EET MID

**Laboratory References:** 

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

## **Accreditation/Certification Summary**

Client: Crain Environmental Job ID: 880-25907-1
Project/Site: Flying M SA #2 SDG: Lea Co., NM

#### **Laboratory: Eurofins Midland**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pr	ogram	Identification Number	Expiration Date
Texas	NI NI	ELAP	T104704400-22-25	06-30-23
The following analytee	are included in this report by	it the laboratory is not cortifi	ind by the governing authority. This list my	ay include analytee for
• •	· · · · · · · · · · · · · · · · · · ·	ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for
The following analytes the agency does not of	· · · · · · · · · · · · · · · · · · ·	ut the laboratory is not certifi	ied by the governing authority. This list ma	ay include analytes for
• •	· · · · · · · · · · · · · · · · · · ·	ut the laboratory is not certifi Matrix	ied by the governing authority. This list ma Analyte	ay include analytes for

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#### **Method Summary**

Client: Crain Environmental Project/Site: Flying M SA #2 Job ID: 880-25907-1

SDG: Lea Co., NM

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

#### **Protocol References:**

EPA = US Environmental Protection Agency

#### Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

**Eurofins Midland** 

MW-3

MW-4

MW-6

#### **Sample Summary**

Client: Crain Environmental Project/Site: Flying M SA #2

880-25907-3

880-25907-4

880-25907-5

Job ID: 880-25907-1 SDG: Lea Co., NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-25907-1	MW-1	Water	03/13/23 12:45	03/14/23 14:42
880-25907-2	MW-2	Water	03/13/23 11:05	03/14/23 14:42

03/13/23 13:30

03/13/23 10:00

03/13/23 14:10

03/14/23 14:42

03/14/23 14:42

03/14/23 14:42

Water

Water

Water

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Revised Date: 08/25/2020 Rev 2020.2

Date/Time

Received by (Signature)

sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by (Signature)

Date/Time

Received by (Signature)

Relinguished by: (Signature)

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control

of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each

# Chain of Custody

Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334 Hobbs, NM (575) 392 7550 Carlsbad, NM (575) 988-3199 EL Paso TX (915) 585-3443 Lubbock, TX (806) 794-1296 Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300

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Xenco

Work Order No: 35907

X	2							www.xenco com	n Page / of /
Project Manager ('indy	- 1			Bill to: (if different)	erent)	Leasy	Leasa Hale	Work Order Comments	Comments
Company Name: Crain	~	Covironmental	_	Company Name	ıme.	Southw	Southwest Royalties	Program UST/PST  PRP Brc	Brownfields ☐ RRC ☐ Superfund ☐
Address.	2925 E. 17 D.	かれ		Address		P.O. Bo	P.O. Box 53570		
City, State ZIP.	550 A	Ddessa, TX 79761		City, State ZIP	ض. ا	Midland, TX	01787 XT V	Reporting Level    Level       PST/UST    TRRP    Level IV	PST/UST TRRP Level IV
Phone: (575)	575) 441. 7244	244	Email	Cindy	Craic	Cindy, Crain @ amail com	Com	Deliverables. EDD ADa	ADaPT ☐ Other
Project Name Flying	Flyina M SA	#2	Turn	Turn Around			ANALYSIS REQUEST	EQUEST	Preservative Codes
Project Number — )	(		Routine	Rush	Pres. Code				None NO DI Water H,O
Project Location: Lea Co	O. NH		Due Date	3/21/23					
Sampler's Name:	Crain		TAT starts the day received by	day received b					
hOd #		(	the lab, if rece	ived by 4.30pr					_
SAMPLE RECEIPT T <sub>B</sub>	Secure Blank.	Yer	Wet Ice:	(Yes) No.	sters				
Samples Received Intact:	(Yes) No	Thermometer ID:	er IÖ.		Г				NaHSO , NABIS
Cooler Custody Seals. Yes	No (MA	Correction Factor	actor:	92,-	БЯ	Sõ			Na,S,O, NaSO
Sample Custody Seals. Yes	Yes No (N/A	Temperature Reading	e Reading	0.5		סקד			Zn Acetate+NaOH Zn
Total Containers.	,	Corrected To	Corrected Temperature:	8:3		1.01			NaOH+Ascorbic Acid SAPC
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth G	Grab/ # of Comp Cont	190			Sample Comments
7- MW	M2	3/13/23	1215	1	_	X			
MW - 2	W 9		5011	i		X			The state of the s
MW - 3	6 W		1330	1		X			
MW-4	G W		2001	1	-	X			
MW-12	GW	<b>↑</b>	1410	1	_ ,	X			
								080-25907 C	880-25907 Chain of Custod
									Appropri
Total 200.7 / 6010 200	200.8 / 6020:		8RCRA 13PPM	M Texas 11	11 AI SI	As Ba Be	3 Cd Ca Cr Co Cu Fe Pb	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO, Na Sr Tl	r TI Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	(s) to be an	alyzed	TCLP/S	PLP 6010	<b>8RCRA</b>	Sb As Ba Be	TCLP/SPLP6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Ni Se Ag Ti U Hg 1631/2451/7470 /7471	1 / 7470 / 7471

#### **Login Sample Receipt Checklist**

Client: Crain Environmental Job Number: 880-25907-1 SDG Number: Lea Co., NM

Login Number: 25907 List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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**Appendix D: Soil Boring Logs** 



Bornary   Number:   Numb													Pag	ge 1 of	4
Sine Name: Southwest Royalties, Inc. Flying M SA Unit 4" Trunk Line End Date:  O3/24/22 End Time:  1520	Boring	g/Well N	Numbei	:			Permit 1	Number:							
Flying M SA Unit 4* Trunk Line			E	3H-1				NM	IOSE F	ile Nbr: L 152	78				
Environmental Contractor:   Crain Environmental Technician's Name:   None	Site N	ame: So	uthwes	st Royalti	es, Inc.		Boreho	le Start D	ate:	03/24/22	Borehole Start	Time:	1520		AM 🗹 PM
Crain   Environmental   Final   Cross   Cros		Flying I	M SA I	Jnit 4" T	runk Lin	ie		End Da	ate:	03/24/22	End 7	Γime:		$\square$ A	AM 🏻 PM
Drilling Company: Talon LPE    Pavement Thickness (inches):   Borehole Diameter (inches):   Borehole Diameter (inches):   Somethic Depth (feet):   57   Drilling Methods:   Afr Rolary   Afric Rolary   Africant   Africa	Enviro						Geologi	ist's Nam				Environn			n's Name:
Talon LPE	D :11:			nvironme		D	, TD1 : 1				( ( 1 )				(C ()
Drilling Method(s): Air Rotary  from soil moisture content): 34	Drillin		-	PF		Paveme		,	nes):	Borenole Dian	` '		Borenoie	-	
Air Rotary   from soil moisture content): 34   water recharges in well): 42.37   FID   PID   PID   Disposition of Drill Cuttings [check method(s)]:   Drum   Spread   Backfill   Stockpile   Other (describe)   Other (describ	Drillin				Apparen	t Boreho			Mea	asured Well DTW		OVA (lis	t model aı		
Sample Description   Sample		Air F	Rotary		from so	oil moistu	re conten	t): 34	l w	ater recharges in	well): 42.37				FID □ PID
Bore-ly Completed (Check of the Content of the Cont	Dispos	sition of	Drill (	Cuttings [	check m	ethod(s)	]:		rum	☐ Spread	☐ Backfill	<b>☑</b> S	tockpile		Other
Sample Description   Sample Description   Sample Modern   Sample Measure   Sample Description   Sample Description   Sample Measure   Sample Measure   Sample Measure   Sample Measure   Sample Description   Sample Description   Sample Measure   Sample Measure   Sample Measure   Sample Measure   Sample Description   Sample Measure   Sample Measure   Sample Measure   Sample Measure   Sample Description   Sample Measure   Sample Measure   Sample Description   Sample Measure	(descr	ibe if ot	her or i	multiple i	tems are	checked	d):								
Sample Description  Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D	Boreh	ole Con	pletion	ı (check o	ne):		Well	☐ Gro	ut	☐ Bentonite	☑ Backfil	1 🔽	Other (d	describe	e)
Sample Description  Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D  Light red, well sorted sand. Fine to medium grained. Sw D			-			l a sam	ple coll	ected. Th	ne borir	ng will be filled	I with bentonite	when la	b results	are re	ceived.
SS 4.5-5 18 1,636										-					
SS 4.5-5 18 1,636	San	Sam Inte	amp	Field Read				Dej					usc	[oist	
SS 4.5-5 18 1,636	ıple	ple ] rval	le Ro inch	1 Ch ling				pth (		Sample	<b>Description</b>		S	ure	
SS 4.5-5 18 1,636	Тур	Dept (feet	ecov	loric (ppn				feet)					mb	Cont	and depth or
SS 4.5-5 18 1,636	е	(1) <b>d</b> (	ery	le n)									2	ent	
SS 4.5-5 18 1,636												lium grain		D	
SS 4.5-5 18 1,636								1	140 000	is or stairing. D	ny.		000		
SS 4.5-5 18 1,636															
SS 4.5-5 18 1,636 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  DC 9-10 18 2,493  D Light red, well sorted sand. Fine to medium grained. SW D  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  SW D  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.								2							
SS 4.5-5 18 1,636 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  DC 9-10 18 2,493  D Light red, well sorted sand. Fine to medium grained. SW D  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  SW D  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.								2							
SS 4.5-5 18 1,636 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  DC 9-10 18 2,493  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  DC 9-10 18 2,493  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.  SW D  Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.								_ 3							
SS   4.5-5   18   1,636								4							
DC 9-10 18 2,493	00	455	40	4.000								lium grain			
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry. SW D	55	4.5-5	18	1,636				5	No odo	rs or staining. D	ry.		SVV	U D	
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry. SW D															
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry. SW D								6							
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry. SW D								_							
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.															
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.								Q							
DC 9-10 18 2,493 Light red, well sorted sand. Fine to medium grained. No odors or staining. Dry.															
DC         9-10         18         2,493         No odors or staining. Dry.         SW         D								9							
								_				lium grain		_	
Light tan to white, fine grained, brittle sandstone,	DC	9-10	18	2,493				10	No odo	rs or staining. D	Ory.		SW	ם	
hard. No odors or staining. Dry.												andstone,	99	D	
11 Inaid. No odols of staining. Dry.								11	niaiu. IV	o ouois di sidili	mig. Diy.				
								12							

Permit Number: L 15278



Boring/Well Number:

## **SOIL BORING LOG**

Page 2 of Site Name: Southwest Royalties Borehole Start Date: 03/24/22

Born	ig/weii i R	чаллост H-1	•	Nullibel.	. 2 102,	o .		Flying M SA Uni			End Da		03/24/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)		Sample De			USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DC	19-20	18	4,059			1314151617181920212223242526272829	Light ta hard. N	in to white, fine grain to white, fine grain to white, fine grain o odor or staining. It is green, clayey sand p. Dry.	ined, brittle sand Dry.	stone,	φ	D D	
DC	29-30	18	1,016			30	staining	J. ∪IY.			SC	D	



1											Page 3	3 of	4
Boring	g/Well N	Number	•	Permit N	umber:	L 1527	8		Site Name: Southwest Royalties	Borehole	Start I	Date:	03/24/22
	В	H-1							Flying M SA Unit 4" Trunkline		End D	ate:	03/24/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31						
							32 33	Gravish	n green, clayey sand, well sorted. N	o odor or			
							34		i green, dayey sand, well sorted. N g. Moist.	o odor or	SC	M	
						-	35 36						
						-	37						
							38 39						
DC	39-40	18	<279				40	Orangis Moist.	sh red, well sorted sand. No odor or	staining.	SW	М	
						7	41						
				À	M	, ,	42	Depth t	o Water (3/29/22) = 42.37'				
							44		y, medium sorted, silty sand. No oc	lor or	SP	D	
							— <sup>45</sup>	staining	<b>д.</b>		5Y	ט	
							47						
							48						



Rorin	g/Well N	Jumbo	<b>.</b> .	Dermit	Number	: L 15278	Q	Site Name: Southwest Royalties   Borehole		ge 4 of	03/24/22
DOIII		H-1	١.	I CITIII	Number	. L 13270	0	•	End D		03/24/22
Sample Type	Sa In	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)	Sample Description	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
DC	49-50	18	<279				49 50 51 52	Gravelly, medium sorted, silty sand. No odor or staining. Dry.	SP	D	
							53 54 55 56	Dark red, silty clay. Non-plastic. No odor or staining. Dry Total Depth of Boring	CL	D	

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings Moisture Content Codes: D = Dry; DC = Dry; DC = Saturated

												Pag	ge 1 of	4
Borin	g/Well l	Number	r:			Permit	Number:	•				•		
			BH-2						ile Nbr: L 152					
Site N	lame: So	outhwes	st Royalti	es, Inc.		Boreho	le Start D	ate:	05/05/22	Borehole Start	Time:	1030		АМ 🗌 РМ
	Flying	M SA I	Unit 4" T	runk Lir	ne		End Da		05/05/22	End 7		1230		
Envir	onmenta					Geolog	ist's Nam				Environme			n's Name:
D",11.			nvironme	ental	D				ndy Crain		In		None	(f4).
Drillii	ng Com <sub>j</sub>	pany: Falon I	PF		Paveme		cness (incl	nes):	Borehole Dian	neter (inches):	Bo	orehole !	-	(feet): 53
Drilli	ng Meth			Apparen	t Boreho	le DTW (		Mea	sured Well DTW		OVA (list n	nodel ar		
	-	Rotary				ire conten			ater recharges in	`				
Dispo	sition of	f Drill (	Cuttings [	check m	ethod(s)	]:		rum	Spread	☐ Backfill	▼ Stoc	kpile		Other
(desci	ribe if ot	her or	multiple i	tems are	checke	d):								
Boreh	ole Con	npletion	n (check o	one):		Well	Gro	ıt	Bentonite	▼ Backfil	11	Other (c	describ	e)
		-			d a sam	ple coll	ected. Th	ne borir	ng will be eithe	er plugged or c	ompleted a	s a MW	<i>1</i> .	
	roundwater was encountered and a sample collected. The boring will be either plugged or completed													Lab Soil and
Sam	Sam Inter	ampl (i	Field Read				Dep					USCS Symbol	Moisture Content	Groundwater
Sample Type	Field Chloride Reading (ppm) Sample Recovery (inches) Sample Depth Interval (feet)						Depth (feet)	Sample		S Sy	ıre (	Samples (list sample number		
Тур	Dept (feet	ecov	lorid (ppn				feet)					mbo	Cont	and depth or
e e	ide om) very very												ent	temporary screen interval)
									d, well sorted sars or staining. D	and. Fine to med	lium grained.	SW	D	
							1	. 40 000	io oi stailing. D	y.				
							_							
							2							
							3							
							_ 3							
							4							
							5							
							6							
							7							
							8							
							<u></u>							
							9							
							10							
							11							
							12							
ì	i						. 17	ì						

Page 2 of

4	
4	

Borin	g/Well l	Numbei	r:	Permit 1	Number	: L 1527	8		Site Name: Southwest Royalties	Borehole	Start D	Pate:	05/05/22
	В	H-2							Flying M SA Unit 4" Trunkline		End Da	ate:	05/05/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13		d, well sorted sand. Fine to mediur rs or staining. Dry.	n grained.	SS	D	
							14		n to white, fine grained, brittle sand	dstone,			
							15	hard. N	o odor or staining. Dry.				
							16						
							17 18						
							19						
							20				SS	D	
							21						
							22						
							23		n green, clayey sand, well sorted. N g. Dry.	lo odor or	sc	D	
							24		•				
							25						
							27						
							28	Oron ='	sh rod woll gorted cond. No education	r otolola a			
							29	Orangis Dry.	sh red, well sorted sand. No odor o	r staining.	SC	М	
							30						

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- 4
-/1

Borin	g/Well l	Numbei	:	Permit 1	Number	: L 15278	8		Site Name: Southwest Royalties	Borehole	Start D	Date:	05/05/22
	В	H-2							Flying M SA Unit 4" Trunkline		End Da	ate:	05/05/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31	Orangi: Dry.	sh red, well sorted sand. No odor o	r staining.	sc	М	
							31 32 33 33 34 35 36 37 38 39 40 41 42 43 44	Dry.	an, well sorted sand. No odor or sta		SC	М	
							45 46	Depth t	to Water (5/19/22) = 46.30'				
							47 48						

Page 4 of \_\_\_\_\_4

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Boring	g/Well N	Number	r:	Permit	Number	L 1527	8		Site Name: Southwest Royalties	Borehole	Start I	Date:	05/05/22
	В	H-2							Flying M SA Unit 4" Trunkline		End D	ate:	05/05/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							49	Light ta Moist.	an, well sorted sand. No odor or stai	ning.			
							50	Gravell staining	y, medium sorted, silty sand. No od g. Dry.	or or	SP	D	
							51						
							52		ed, silty clay. Non-plastic. No odor o	r staining.	O.	1	
							53	Dry Total D	epth of Boring = 53'		CL	D	
							54	Total D	op 5. 26111g = 66				
							55						
							56						
							57						

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings Moisture Content Codes:  $\mathbf{D} = \text{Dry}$ ;  $\mathbf{M} = \text{Moist}$ ;  $\mathbf{W} = \text{Wet}$ ;  $\mathbf{S} = \text{Saturated}$ 

												Pag	ge 1 of	4
Boring/	/Well N	Jumber	r:			Permit !	Number:							
			BH-3			<u> </u>			ile Nbr: L 152					
Site Na	me: So	uthwes	st Royaltie	es, Inc.	l	Boreho	le Start Da	ate:	05/05/22	Borehole Start	Γime:	1320		AM PM
			Unit 4" Tr	runk Lin	ıe		End Da		05/05/22	End T		1520		
Enviror				.4-1	ļ	Geologi	ist's Name		L. Oralin	I	Environmen			ı's Name:
Drilling			nvironme		Daveme	ent Thiel	kness (incl		ndy Crain Borehole Diam	notor (inches):	Bo	rehole l	None Depth (	(faat):
غىسى	-	pany. Talon L	LPE	!	ravenic		.00	168).	DUICHUIC DIan	6	150	Tenore	-	(1eet). 57
Drilling				Apparen	t Boreho!	le DTW (i		Mea	asured Well DTW	V (in feet after	OVA (list m	nodel ar		
	Air F	Rotary		from so	oil moistu	ire conten	nt): 44	w	vater recharges in	well): 48.33	<u> </u>			FID PID
Disposi	ition of	Drill (	Cuttings [c	check m	ethod(s)	<i>i</i> ]:		Orum	Spread	☐ Backfill	▼ Stoc	kpile		Other
(descril	be if ot	her or 1	multiple it	tems are	checked	d):								
Boreho	le Con	pletion	n (check o	one):		Well	Grou	at	Bentonite	▼ Backfil		Other (d	lescrib	e)
Ground	Groundwater was encountered and a sample collected. The boring w								ng will be eithe	er plugged or co	ompleted as	a MW	<i>l</i>	
												M	Lab Soil and	
Sample Type	Depth (feet)  Sample Reading (ppm  Sample Recover (inches)  Sample Depth  Sample Depth  Sample Depth  Sample Depth										USCS Symbol	Moisture Content	Groundwater Samples (list	
ple	ole D val /	Depth (feet)  Sample Description  Sample Recovery (inches)  Sample Depth									SSy	re C	sample number	
Гуре	)eptl (feet	cove	(feet)								mbo	ont	and depth or temporary screen	
	<u>.</u>	тy	e 1)					<u> </u>					ent	interval)
			<u> </u>						ed, well sorted sa ers or staining. D	and. Fine to med Dry.	lium grained.	sw	D	
	ļ						_ 1		10 0. 0.0	.,.			'	
	ļ					l		l					'	
	ļ						_ 2	l					'	
	ļ						3	l					'	
	ļ									grained, brittle sa	andstone,		_ '	
	ļ						4	hard. N	lo odors or stain	ing. Dry.		SS	D	
	ļ							l					'	
	ļ						5	l					'	
	ļ							l					'	
	ļ						_ 6	l					'	
	ļ						7	l					'	
	ļ						— ' I	l					'	
	ļ						8	l					'	
	ļ						<u> </u>	l					'	
	ļ						9	l					'	
	ļ							l					'	
	ļ						10	l					'	
	ļ							l					'	
	ļ						11	l					'	
			'				12	1						

Page 2 of 4

Rorir	ng/Well I	Jumba	••	Permit Num	bor: I 1527	Q		Site Name: Southwest Royalties	Borehole		ge 2 or	4
Dom		H-3	١.	1 CHIIIC INGIII	oci. L 1327	O		Flying M SA Unit 4" Trunkline		End Da		05/05/22 05/05/22
Sample Type	Sa In	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
						13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	hard. N	in to white, fine grained, brittle sand to odor or staining. Dry.			D	

Page 3 of 4

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Boring/Well Number:			Dormit N	Jumban	: L 1527	Q		Site Name: Southw	vest Dovelties	Borehole	Stort F		05/05/00	
DOLIII			•	ı Cılılıt l	vuiiiber	. L 134/	υ					Start L End Da		05/05/22
	I B	H-3		ı					Flying M SA Unit	ıt 4 Trunkline		LIIU D		05/05/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample De			USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								Orangis Dry.	sh red, well sorted s	and. No odor or	staining.	SC	М	
							31	y.					141	
							2.2							
							32							
							33							
							34							
							35							
							36							
							27							
							37							
							38							
							39							
							40							
							41							
							42							
							43	Damp						
							44	рапр						
							44							
							45							
							46							
							47							
							40							
							48							

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1

Borin	g/Well N	Number	r:	Permit 1	Number	: L 1527	8		Site Name: Southwest Royalties	Borehole	Start I	Date:	05/05/22
	В	H-3							Flying M SA Unit 4" Trunkline		End D	ate:	05/05/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)			Sample Description			Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							49 50 51	water (	ish, silty sand. No odor or staining.  5/19/22) = 48.33'  ed, silty clay. Non-plastic. No odor o		SC	M	
							52 53 54 55 56 56		Depth of Boring = 57'				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings Moisture Content Codes:  $\mathbf{D} = \text{Dry}$ ;  $\mathbf{M} = \text{Moist}$ ;  $\mathbf{W} = \text{Wet}$ ;  $\mathbf{S} = \text{Saturated}$ 

												Paş	ge 1 of	4
Boring	g/Well N	Number	i:			Permit I	Number:							
			/IW-4						ile Nbr: L 152		<u> </u>			
Site N	ame: So	outhwes	st Royaltie	es, Inc.	!	Boreho	le Start Da	ate:	10/06/22	Borehole Start	Γime:	1024		AM PM
			Unit 4" Tr	runk Lir	ıe		End Da		10/06/22	End T		1240		
Enviro	onmenta			_		Geologi	ist's Name			<del></del>	Environme			ı's Name:
Deillir	Cı 1g Comp		nvironme	ntal	Davame	ant Thiel	kness (incl		ndy Crain Borehole Diam	natar (inches):	l <sub>R</sub> ,	orehole l	None Depth	(faat).
Dimm		<sub>рапу:</sub> Talon L	PE	Ī	Pavenic		kness (inci .00	nes).	Borenoie Dian	6	Do	Menore 1	-	(Teet): 55
Drilling Method(s): Apparent Bore								Me	asured Well DTW		OVA (list n	nodel ar		
Air Rotary from soil mois					oil moistu	ire conten	nt): 25	; w	vater recharges in	well): 41.60				_
Dispos	sition of	f Drill (	Cuttings [	check m	ethod(s)	)]:		Orum	Spread	☐ Backfill	▼ Stoc	kpile		Other
(descr	ibe <u>if ot</u>	her or	multiple i	tems are	checked	d):								
(describe if other or multiple items are checked):  Borehole Completion (check one):   Well ☐ Grout ☐ Bentonite ☐ Backfill ☐ Other											Other (d	lescribe		
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)	Sample Description				USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							1		ght red, well sorted sand. Fine to medium grained o odors or staining. Dry.				D	
							2							
							3							
							4							
	'		'						an to white, fine on to white, fine of the odors or stain	grained, brittle sa ning. Dry.	andstone,	SS	D	
							5			,			'	
							6							
			'				—							
							7							
							8							
							9							
							10							
							11							
							12	ĺ						

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Borin	g/Well l	Number	r:	Permit Number: L 15278			Site Name: Southwest Royalties Borehol			ate:	10/06/22	
	М	W-4						Flying M SA Unit 4" Trunkline		End Da	ate:	10/06/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
						13 14 15 16 17 18		n to white, fine grained, brittle sand lo odor or staining. Dry.	Istone,	SS	D	
						19 20 21 22 23 24		h brown, poorly sorted silty sand. N g. Damp at 25'.	o odor or	SC	М	
						25 26 27 28 29 30	Gray to Dry.	yellow, moderately well sorted, silt	y sand.	SC	D	

Page 3 of

Borin	Boring/Well Number:			Permit Num	ber: L 1527	8	Site Name: Southwest Royalties Borehole	Start I	Date:	10/06/22
	М	W-4					Flying M SA Unit 4" Trunkline	End D	ate:	10/06/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)	Sample Description	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
						31	Gray to yellow, moderately well sorted, silty sand. Dry.	sc	D	
						32 33 34 35 36 37 38 39	Reddish sand, well sorted, dry.  White, fine grained, brittle sandstone, hard. No odor or staining. Dry.	sw	D	
						40 41 42 43 44 45 46 47 48	Depth to water (10/7/22) = 41.60' bgs  Dark brown sand, well sorted, dry.	SW	D	

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Borin	g/Well N		r:	Permit	Number	: L 1527	8			Borehole			10/06/22
	M'	W-4							Flying M SA Unit 4" Trunkline		End D	ate:	10/06/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							49 50 51 52 53 54 55	Dark re Dry	rown sand, well sorted, moist.  ed, silty clay. Non-plastic. No odor or epth of Boring = 55'	staining.	SW	М	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings Moisture Content Codes:  $\mathbf{D} = \text{Dry}$ ;  $\mathbf{M} = \text{Moist}$ ;  $\mathbf{W} = \text{Wet}$ ;  $\mathbf{S} = \text{Saturated}$ 

								Paş	ge 1 of	6
Boring/Well Number:		Permit	Number:							
BH-5		<u> </u>			ile Nbr: L 152					
Site Name: Southwest Royalties, In	<i>.</i> .	Boreho	ole Start Da	ate:	10/06/22	Borehole Start	Γime: 1	1300		AM PM
Flying M SA Unit 4" Trunk	_ine		End Da		10/07/22	End T		1535		
Environmental Contractor:		Geolog	gist's Name				Environmen	Environmental Technician's Name:		
Crain Environmental Drilling Company:	T <sub>Dover</sub>	ant Thic	kness (incl	Cindy Crain  Ches): Borehole Diameter (inches):			IR <sub>O</sub>	None Borehole Depth (fee		
Talon LPE	Favein		kness (inci .00	Borenole Diameter (inches):			DO	renoie i	-	(1eet): 95
	rent Boreho			Mea	Measured Well DTW (in feet after OVA (list model at			odel ar		
Air Rotary from	soil moist	ure conter	nt): DR	Yw	ater recharges in	well): DRY				FID PID
Disposition of Drill Cuttings [check	method(s	,)]:	□ D	rum	Spread	☐ Backfill	▼ Stocl	kpile		Other
(describe if other or multiple items	ır <u>e check</u> e	?d):								
Borehole Completion (check one):		Well	Grou	ıt	☐ Bentonite	☐ Backfil	1 (	Other (d	lescribe	e)
The boring was allowed to rema	n open to	check	for prese	nce of	water. The bo	ring will be plug	gged if no w	/ater is	prese	ent.
Salar	T								ĭ	Lab Soil and
Field Chloride Reading (ppm)  Sample Recovery (inches)  Sample Depth Interval (feet)  Sample Type			Dep					USCS Symbol	Moisture Content	Groundwater Samples (list
Id Chloriding (pile Reco			Depth (feet)		Sample	e Description		S Sy	ıre (	samples (list sample number
orid ppn ppn cove cove s) Dept feet			eet)					mbe	ont	and depth or
le le ery ery									ent	temporary screen interval)
					ed, well sorted sarts or staining. D	and. Fine to med orv.	lium grained.	sw	D	
			1	140 000	10 01 0tang	ny.		•	-	
									'	
			2						'	
			3						'	
			_			grained, brittle sa	andstone,		_	
			4	hard. N	lo odors or stain	ing. Dry.		SS	D	
									'	
			5						'	
									'	
			6						'	
			7						'	
			<u> </u>						'	
			8						'	
			<u> </u>						'	
			9						'	
									'	
			10						'	
									'	
			11						'	
			12						'	

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Borir	ıg/Well I	Number	r:	Permit	Number:	L 1527	8		Site Name: Southwest Royalties	Borehole	Start D	ate:	10/06/22
	В	H-5							Flying M SA Unit 4" Trunkline		End Da	ate:	10/07/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13 14 15 16 17		an to white, fine grained, brittle sand lo odor or staining. Dry.	stone,	SS	D	
							18 19 20 21 22 23 24	Reddis staininç	h brown, poorly sorted silty sand. N g.	o odor or	SC	D	
							25 26 27 28 29 30	Gray to Dry.	o yellow, moderately well sorted, silt	y sand.	SC	D	

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6

Bori	ng/Well l	Number	r:	Permit	Number	: L 1527	8		Site Name: Southwest Royalties	Borehole	Start I	Date:	10/06/22
	В	H-5							Flying M SA Unit 4" Trunklin	е	End D	ate:	10/07/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
									yellow, moderately well sorted, s	ilty sand.	SC	D	
							31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	White, or stain	h sand, well sorted, dry.  fine grained, brittle sandstone, haning. Dry.  rown sand, well sorted, dry.	rd. No odor	sw	D D	
							48						

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

#### **BORING LOG**

Page 4 of Boring/Well Number: Borehole Start Date: Permit Number: L 15278 Site Name: Southwest Royalties 10/06/22 BH-5 Flying M SA Unit 4" Trunkline End Date: 10/07/22 Lab Soil and Moisture Content Sample Recovery Field Chloride Reading (ppm) Sample Depth Interval (feet) **USCS Symbol** Sample Type Groundwater Depth (feet) Samples (list **Sample Description** sample number and depth or temporary screen interval) Dark brown sand, well sorted, dry. SW 49

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings Moisture Content Codes: D = Dry; DC = Dry; DC = Saturated

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

### **BORING LOG**

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Borin	g/Well l		r:	Permit	Number	: L 1527	8		Site Name: Sout		Borehole			10/06/22
	В	H-5			1				Flying M SA U	Init 4" Trunkline		End Da	ate:	10/07/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample l	Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								Dark bi	rown sand, well so	orted, dry.		0)4/		Í
							67					SW	D	
							68							
							69							
							70							
							71							
							72							
							73							
							74							
							75							
							76							
							77							
							78							
							79							
							80							
							81							
							82							
							83							
							84							

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings Moisture Content Codes: D = Dry; DC = Dry; DC = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

### **BORING LOG**

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Boring/		Number H-5	r <b>:</b>	Permit N	umber:	L 1527	8		Site Name: Southwest Royalties Flying M SA Unit 4" Trunkline	Borehole	Start I End Da		10/06/22 10/07/22
Sample Type	Sa In	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							85 86 87 88 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102	Dark re Dry	own sand, well sorted, dry.  d, silty clay. Non-plastic. No odor o  epth of Boring = 95'	r staining.	SW	D D	mterval)

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings Moisture Content Codes: D = Dry; DC = Dry; DC = Saturated

											Pag	ge 1 of	4
Boring/Well	Number	r:			Permit 1	Number:							
		BH-6			<u> </u>			ile Nbr: L 152					
Site Name: S	outhwes	st Royaltie	es, Inc.	ļ	Borehol	le Start Da	ate:	10/07/22	Borehole Start	Γime: 1	1650		AM PM
		Unit 4" Tr	runk Lin	ıe	<u> </u>	End Da		10/08/22	End T		1045		AM PM
Environment			-		Geologi	ist's Name				Environmen	Environmental Technician's Name:		
Drilling Con		nvironme		Daveme	ent Thiel	kness (incl	Cindy Crain  Ches): Borehole Diameter (inches):			IR <sub>O</sub>	rehole	None Depth	(faat):
_	npany: Talon I	LPE	I	Paveme		kness (inci .00	nes): Borenole Diameter (inches): B			BO.	renoie	(1eet): 65	
Drilling Met			Apparen	t Boreho!	le DTW (i		Mea	asured Well DTW		OVA (list m	odel ar		
Air	Rotary		from so	oil moistu	ire conten	nt): 45	; w	ater recharges in	well): 63.6				FID PID
Disposition of	of Drill (	_ Cuttings [	check m	ethod(s)	)]:	_ D	rum	Spread	☐ Backfill	▼ Stocl	kpile		Other
(describe if o	the <u>r</u> or	multiple i	tem <u>s</u> are	ch <u>ecke</u>	d):								
Borehole Co	mpletion	n (check c	one):		Well	Grou	ıt	☐ Bentonite	☐ Backfil	1 (	Other (d	lescribe	e)
A groundwa	at <u>er san</u>	n <u>ple was</u>	collect	ed from	the bor	ring, and	the bor	ring will be co	nverted to a mo	onitor well.			
	Sa	<b>E</b> E										ĭ	Lab Soil and
Sample Depth Interval (feet) Sample Type	Sample Recovery (inches)	Field Chloride Reading (ppm)	'			Dep					USCS Symbol	Moisture Content	Groundwater Samples (list
ple D val ( ple '	ple Reco	Chl.	'	1 1		Depth (feet)		Sample	e Description		Sy	ire C	sample number
)eptl (feet Typ:	cove	orid	'	1 1		eet)					mbo	ont	and depth or temporary screen
, , ,	тy	e 1)	<u> </u>	<u> </u>	<u>                                     </u>						·	ent	interval)
	T							ed, well sorted	and. Fine to med Ory.	ium grained.	sw	D	
						_ 1	1.0	10 0. 0.0	.,,.				
						,							
						_ 2							
						3							
						<del></del>			grained, brittle sa	andstone,	20		
						4	hard. N	lo odors or stain	ing. Dry.		SS	D	
						5							
						_ 6							
						7							
						_ ′							
						8							
						_							
						9							
						10							
						11							
		'				12							

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Borin	g/Well l	Number	r:	Permit	Number:	L 1527	8		Site Name: Southwest	Royalties	Borehole		ate:	10/07/22
	В	H-6							Flying M SA Unit 4"	' Trunkline		End Da	ate:	10/08/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Desci			USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Гуре	Pepth (feet)	covery s)	oride (ppm)				13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	hard. N	an to white, fine grained to odor or staining. Dry.  to light tan, moderately to oder or staining. Dry	well sorted,		mbol $\%$	ontent D	temporary screen
							28 29 30							

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-/1

Borin	g/Well l	Number	r:	Permit	Number	: L 1527	8		Site Name: Southwest Royalties	Borehole	Start I	Date:	10/07/22
	В	H-6							Flying M SA Unit 4" Trunkline	•	End Da	ate:	10/08/22
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)				Depth (feet)		Sample Description		USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31		to light tan, moderately well sorted No oder or staining. Dry	l, silty	sc	D	
							32						
							33 34						
							35 36						
							— <sup>37</sup>						
							39						
							40						
							42						
							43 44	Domo	ot 45'				
							45	Damp	al 4J				
							46 47		eddish brown, moderately well sort No odor of staining. Dry.	ed, silty	SC	D	
							48						

Permit Number: L 15278

Boring/Well Number:

BH-6

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

#### **BORING LOG**

Site Name: Southwest Royalties

Flying M SA Unit 4" Trunkline

	Paş	ge 4 of	4
Borehole	Start I	Date:	10/07/22
	End Da	10/08/22	
	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
ed, silty	SW	D	

Sample Description  Sample Description  Sample Description  Sample Description  Sample Description  Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, silty sand. No odor of staining, Dry.  Do Do Dark reddish brown, moderately well sorted, Silty sand. No odor of staining, Dry.  Do Dark reddish brown, moderately well sorted, Silty sand. No odor of staining, Dry.  Do Dark reddish brown, moderately well sorted, Dry Silty sand. No odor of staining, Dry.  Do Dark red			11-0					Trying W SA Onit + Trunkiine	Bild D		10/00/22
Dark reddish brown, moderately well sorted, silty sand. No odor of staining. Dry.  SW D  And No odor of staining. Dry.  SW D  And No odor of staining. Dry.  SW D  And No odor of staining. Dry.  SW D  Depth to water (10/8/22) = 63.6' bgs	Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	Field Chloride Reading (ppm)			Depth (feet)	Sample Description	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
59  60  61  62  63  Depth to water (10/8/22) = 63.6' bgs	pe	pth et)	very	ide )m)			49 50 51 52 53 54 55 56				temporary screen interval)
Dark red, silty clay. Non-plastic. No odor or staining. Dry  Total Depth of Boring = 65'  Total Depth of Boring = 65'						7	59 60 61 62 63 64 65	Dark red, silty clay. Non-plastic. No odor or staining. Dry	CL	D	

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings Moisture Content Codes:  $\mathbf{D} = \text{Dry}$ ;  $\mathbf{M} = \text{Moist}$ ;  $\mathbf{W} = \text{Wet}$ ;  $\mathbf{S} = \text{Saturated}$ 

Sante Fe Main Office Phone: (505) 476-3441

General Information Phone: (505) 629-6116

Online Phone Directory <a href="https://www.emnrd.nm.gov/ocd/contact-us">https://www.emnrd.nm.gov/ocd/contact-us</a>

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

CONDITIONS

Action 420209

#### **CONDITIONS**

Operator:	OGRID:				
SOUTHWEST ROYALTIES INC	21355				
P O BOX 53570	Action Number:				
Midland, TX 79710	420209				
	Action Type:				
	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)				

#### CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Accepted as part of the incident record. +Flying M Groundwater Investigation Report. App ID: 420209	1/15/2025