# AP - 111

# C-141s

(7)



Michelle Lujan Grisham Governor

> Howie C. Morales Lt. Governor

#### NEW MEXICO ENVIRONMENT DEPARTMENT

#### **Hazardous Waste Bureau**

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6313 Phone (505) 476-6000 Fax (505) 476-6030 <u>www.env.nm.gov</u>

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED** 



James C. Kenney Cabinet Secretary

Jennifer J. Pruett Deputy Secretary

#### APR 0 3 2020

John Moore Environmental Superintendent Western Refining, Southwest Inc., Gallup Refinery 92 Giant Crossing Road Gallup, New Mexico 87301

RE: APPROVAL WITH MODIFICATIONS RESPONSE ACTION REPORT DGS 105 ADDITIVE TANK – RAIL CAR LOADING AREA – GASOLINE RELEASE WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY EPA ID # NMD000333211 HWB-WRG-20-004

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response Action Report DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release* (Report), dated January 6, 2020, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications with the following comments. NMED's comments are attached.

The Permittee must address all comments in the attachment and submit a response letter, and replacement pages no later than June 29, 2020. The investigation work plan required by Comments 2, 4 and 5 must be submitted no later than August 31, 2020.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document

Mr. Moore Response Action Report Page 2

does not constitute agreement with all information or every statement presented in the document.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,

al for

Kevin Pierard Chief Hazardous Waste Bureau

- cc: D. Cobrain, NMED HWB M. Suzuki, NMED HWB C. Chavez, OCD L. King, EPA Region 6 (6LCRRC) B. Moore, WRG
- File: Reading File and WRG 2020 File HWB-WRG-20-004

# Attachment 1

#### **NMED Comments**

#### Comment 1

In the Executive Summary, page 5 of 8, the Permittee states, "[t]his Response Action Report provides the details for the approximately 8,900-gallon rail car loading area gasoline release... A vacuum truck was used to recover the estimated 8,900 gallons of gasoline." The statement indicates that entire volume of the released gasoline was recovered by a vacuum truck. Verify the accuracy of the statement and provide an accurate estimate of the released and recoved volumes of gasoline in a response letter.

#### Comment 2

In the Executive Summary, page 5 of 8, the Permittee states, "[a]pproximately 153 tons of spill area soil was excavated and delivered to Valencia Regional Landfill in Los Lunas, New Mexico for disposal. Soil confirmation samples were not collected in the spill area." It is necessary to collect soil confirmation samples from the limits of the excavation. Submit a work plan to advance soil borings to the final depth of the excavation. If the excavation pit was already backfilled, and collect samples from the native soils directly beneath the backfill materials for the analytical suite listed on page 8 of 8 in the Report. If the pit is open at this time, collect soil samples from the excavation limits.

#### Comment 3

In the General Information Section, *Description of the Release*, page 5 of 8, the Permittee states, "[t]he Refinery's on-site laboratory analyzed a hydrocarbon sample from the release verifying that the product was gasoline." If the gasoline contained additives, provide the information regarding the constituents in the response letter.

#### Comment 4

In the General Information Section, *Description of the Release*, page 6 of 8, the Permittee states, "[c]lean-up activities outside the containment areas were not conducted because the spill generally was contained inside the bermed area." Soil samples outside of the bermed area must be collected to confirm that the spill was contained within the berm and the soils were not adversely affected. Submit a work plan to collect soil samples outside of the bermed area.

#### Comment 5

In the Remediation Activities Section, *Remediation*, page 6 of 8, the Permittee states, "[f]ollowing removal of the surface gasoline, approximately 153 tons of petroleum impacted soils below the pipe rack were excavated to an 18-inch depth in an area approximately 41 feet by 97 feet (Figure 3) in November of 2018." The gasoline release occurred in May 2017. The contaminated soils were excavated approximately 16 months after the release. During the 16month period, residual hydrocarbons may have infiltrated into soils to depths below 18 inches bgs. Submit a work plan to advance soil borings to depths below the excavation floor and collect soil samples to determine the vertical extent of contamination. Mr. Moore Response Action Report Attachment Page 2 of 2

#### Comment 6

In the Remediation Activities Section, *Assessment – Soil Confirmation Sampling Event, Soil Sampling,* page 7 of 8, the Permittee states, "[i]n addition, 15 soil samples were collected from excavated soils and sampled for benzene. All 15 samples were non-detect for benzene (Appendix E)." According to Appendix E, benzene was detected in soil samples identified as "Rail Pipe Excavated Soils" and "Rail Pipe Excavated Soils 2". In addition, the total petroleum hydrocarbons (TPH) – diesel range organics (DRO), and gasoline range organics (GRO) concentrations were recorded as 25,000 mg/kg and 1,800 mg/kg, respectively, in the soil sample designated as "Rail Pipe Excavated Soils". These concentrations exceeded TPH soil screening levels for industrial/construction workers; 3,800 mg/kg for TPH-DRO, and 500 mg/kg for TPH-GRO. Therefore, the statement does not justify not collecting confirmation samples. Also, the additional 15 soil samples should have been analyzed for TPH as wells.

In addition, although gasoline was released, TPH-DRO concentrations were detected from the waste characterization samples. It is not clear whether diesel was released in the vicinity of the spill prior to the gasoline release of May 7, 2017. Provide an explanation for the detected TPH-DRO concentrations in the response letter.

#### Comment 7

In the Conclusions and Recommendations Section, page 7 of 8, the Permittee states, "[o]n March 13, 2019, there was a diesel release in the same area beneath the pipe rack. Therefore, MPC recommends that soil confirmation samples be collected to determine if additional soil excavation is necessary prior to installation of the proposed concrete containment pad beneath the pipe rack." Provide a reference to the March 13, 2019 release in the response letter.

NMED concurs with the proposal of combining the investigations of March 13, 2019 and May 7, 2017 releases. However, the proposed sampling locations depicted in Figure 4, *Proposed Soil Confirmation Sample Locations*, must be adjusted to the areas where gasoline and diesel likely accumulated on the ground surface (e.g., topographically low areas).

#### Comment 8

In the Conclusions and Recommendations Section, page 8 of 8, the Permittee states, "[t]his comparison and the analytical results will be sent to NMED as a letter style report describing the sampling event, results, and further action if necessary." A work plan that addresses Comments 2, 4, and 5 must be submitted and approved prior to conducting the investigation. Revise the statement accordingly and provide a replacement page with the response letter.



January 6, 2020

Mr. Dave Cobrain, Program Manager New Mexico Environmental Department 2905 Rodeo Park Drive East, Bldg. 1 Santa Fe, NM 87SOS-6303

RE: Response Action Report DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release Marathon Petroleum Company LP, Gallup Refinery (dba Western Refining Southwest, Inc.) EPA ID# NMD000333211 WRG-17-MISC

Dear Mr. Cobrain:

Marathon Petroleum Company LP (dba Western Refining Southwest, Inc.) Gallup Refinery is submitting this Response Action Report for Rail Car Loading Area Gasoline Release that occurred on May 7, 2017. The Response Action Report has been enclosed for your review. If there are any questions, please call Brian Moore at 505-726-9745.

#### Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely, Marathon Petroleum Company LP, Gallup Refinery

Robert S. Harlos

Robert S. Hanks Refinery General Manager

Enclosure

cc C. Chavez NMOCD B. Moore Marathon Gallup Refinery

92 Giant Crossing Road Jamestown, NM 87347



Michelle Lujan Grisham Governor

> Howie C. Morales Lt. Governor

APR 0 3 2020

#### NEW MEXICO ENVIRONMENT DEPARTMENT

#### Hazardous Waste Bureau

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James C. Kenney Cabinet Secretary

Jennifer J. Pruett Deputy Secretary

#### John Moore Environmental Superintendent Western Refining, Southwest Inc., Gallup Refinery 92 Giant Crossing Road Gallup, New Mexico 87301

#### RE: APPROVAL WITH MODIFICATIONS RESPONSE ACTION REPORT TANK 35 – OILY WATER RELEASE WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY EPA ID # NMD000333211 HWB-WRG-19-018

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response Action Report Tank 35 – Oily Water Release* (Report), dated October 4, 2019, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications with the attached comments.

The Permittee must address all comments in the attachment and submit a response letter, and replacement pages no later than **July 31, 2020**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document.

Mr. Moore Response Action Report Tank 35 Page 2

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

이제 옷을 가 있는 것 같아?

Sincerely,

Km O

Kevin Pierard Chief Hazardous Waste Bureau

- cc: D. Cobrain, NMED HWB M. Suzuki, NMED HWB C. Chavez, OCD L. King, EPA Region 6 (6LCRRC) B. Moore, WRG
- File: Reading File and WRG 2020 File HWB-WRG-19-018

Attachment

Mr. Moore Response Action Report Tank 35 Attachment Page 1 of 1

#### Comment 1

In the Remediation Activities, *Assessment – Soil Confirmation Sampling Event,* page 5 of 14, the Permittee states, "[b]oth field screening and analytical sampling were completed to confirm contamination was removed. Soil samples were collected from six locations shown on Figure 5." According to Figure 5, *Tank 35 Soil Sample Locations,* soil sample T-35-2 was collected outside of the excavation area. All soil confirmation samples should have been collected within excavation floor or sides. Explain the basis for collecting confirmation sample T-35-2 outside of the excavation area and provide a justification in a response letter.

#### Comment 2

In the Conclusions and Recommendations, page 7 of 14, the Permittee states, "[t]he Refinery received heavy rainfall on July 29, 2017 and July 30, 2017. On July 30, 2017, Tank 35 began to overflow with oily water. The oily water flowed through the vents at the top of the tank and pooled inside the tank berm." Explain whether any contingency measures were implemented to prevent overflow from Tank 35 in case similar rain events occur in the future. If so, explain nature of the contingency measures in the response letter. Otherwise, explain why such measures are not necessary at this time (e.g., upgrading the wastewater treatment system).

#### Comment 3

Although the Conclusions and Recommendations, *Soil Confirmation Sampling Results*, page 7 of 14, adequately discussed the TPH exceedance of residential screening levels in the confirmation samples, the discussion regarding the exceedance of the soil screening level for a dilution and attenuation factor (DAF) of 20 for lead was not included. Include the discussion and provide a replacement page.

#### Comment 4

In the Conclusion and Recommendations, *Recommended Additional Excavation and Assessment*, page 7 of 14, the Permittee recommends no further action based on the TPH concentrations being below the industrial/occupational or construction worker screening levels. The Permittee must provide a justification for no further action relative to the lead concentrations that exceeded the soil screening level for a DAF of 20. Provide a replacement page that includes the discussion or propose to further investigate/remediate the lead exceedance detected in the excavation area, if appropriate.



# **RESPONSE ACTION REPORT**

# DGS 105 ADDITIVE TANK – RAIL CAR LOADING

# **AREA – GASOLINE RELEASE**

# GALLUP REFINERY MARATHON PETROLEUM COMPANY, LP

# GALLUP, NEW MEXICO

EPA ID# NMD000333211



# Response Action Report Checklist

Included	NA	· · · ·						
$\boxtimes$		Title Page						
$\boxtimes$		Executive Summary						
		Report Checklist						
$\boxtimes$		Table of Contents						
$\boxtimes$		Section 1 - Introduction						
$\boxtimes$		General information about Gallup Refinery and Area of Release						
$\boxtimes$		Description of the Release						
$\boxtimes$		Characterization of Released Material						
$\boxtimes$		<ul> <li>Discussion of the Unit / Process / Area of Release (as applicable)</li> </ul>						
$\boxtimes$		<ul> <li>Location of unit(s) on a topographic map of appropriate scale</li> </ul>						
		<ul> <li>Designation of type and function of unit(s)</li> </ul>						
		<ul> <li>General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings)</li> </ul>						
		<ul> <li>Dates that the unit(s) was operated;</li> </ul>						
		o Specifications of all wastes that have been managed at/in the unit(s) to the						
		extent available. Include any available data on hazardous waste or						
		hazardous constituents in the wastes						
	$\boxtimes$	<ul> <li>All available information pertaining to any release of hazardous waste or</li> </ul>						
		hazardous constituents from such unit(s) (to include ground water data, soil						
N7		analyses, air, and surface water data).						
		Site Conditions That Affected Release						
		Section 2 - Remediation Activities						
$\boxtimes$		<ul> <li>Detailed discussion of remediation, what type of cleanup conducted, where</li> </ul>						
		was it conducted (GPS coordinates or measurements to physical site						
		features), dimensions of excavation, volumes of remediation waste,						
$\boxtimes$		characterization sampling, disposition of wastes						
		<ul> <li>Soil Sampling – detailed discussion of sample collection and analysis</li> </ul>						
		Soil Field Screening						
		<ul> <li>Subsurface soil sampling – detailed discussion on soil borings, sampling and analysis</li> </ul>						
$\boxtimes$		Groundwater Conditions – detailed discussion well installation and						
		groundwater sample collection and analysis						
	$\boxtimes$	Section 3 – Regulatory Criteria Comparisons						
		Presentation of applicable regulatory screening criteria and comparison to     site concentrations						
		site concentrations. Section 4 – Conclusions and Recommendations						
		<ul> <li>NMED Concurrence – No Further Action Required</li> </ul>						



		<ul> <li>Deferral – Release Area within Existing SWMU / AOC</li> </ul>
		<ul> <li>Possible consideration for SWMU Assessment Report</li> </ul>
		Tables – Soil and/or Groundwater Data
		Figures
		Figure – Affected Area - Topo Map
		Figure - Area Affected by Release – Aerial Photo
		Figure - Aerial Photo – Tank – Unit – Process Area
		☑ Figure - Extent of Excavation Activities
		Figure - Sampling Locations (Soil, Wells, Surface Water)
		Appendices
$\boxtimes$		Appendix – Analytical
$\boxtimes$		Appendix – Photos
		Appendix – Waste Manifests
		Appendix – Calculations for Reportable Quantities
		Appendix – Form C-141 Release Notification and Corrective Action
		Appendix – Boring Logs/Monitoring Well Completion Logs
	$\square$	Appendix – Standard Operating Procedures
	_	• Appendix – Standard Operating Flocedules



#### MRLS Response Action Report

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## **Executive Summary**

The Marathon Petroleum Company Gallup Refinery (Refinery) experienced a gasoline release May 7, 2017. This Response Action Report provides the details for the approximately 8,900-gallon rail car loading area gasoline release. An open gasoline pipeline additive valve adjacent to the DGS 105 additive tank was determined to be responsible for the release.

A vacuum truck was used to recover the estimated 8,900 gallons of gasoline. The recovered gasoline was placed into the slop tank at the Refinery. Approximately 153 tons of spill area soil was excavated and delivered to Valencia Regional Landfill in Los Lunas, New Mexico for disposal. Soil confirmation samples were not collected in the spill area.

# Introduction

The Refinery is located approximately 17 miles east of Gallup, New Mexico along the north side of Interstate Highway I-40 in McKinley County. The physical address is I-40, Exit #39, Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres and is shown on Figure 1, including the rail car loading area. The rail car loading area transports various products from the Refinery to distributors.

# **General Information**

The Refinery typically receives crude oil from the Four Corners area. The crude oil is transported by pipeline or tanker truck to the Refinery. Various process units operated at the Refinery include: crude distillation, reforming, fluidized catalytic cracking, alkylation, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

## **Description of the Release**

At 8:00 am on May 7, 2017, an operator observed hydrocarbon product pooling beneath the pipe rack located along the rail car loading area's west side (Figure 2). The hydrocarbon product was also observed flowing into a sewer box between the pipe rack and the rail car loading area. Notifications were immediately made to the off-site supervisor, Kurtz Fire Department, the Maintenance Department, and the Environmental Department.

The Refinery's on-site laboratory analyzed a hydrocarbon sample from the release verifying that the product was gasoline. The Maintenance Department used a vacuum truck to recover the gasoline product from the sewer box. After the sewer box fluid level decreased, it was observed that a 3/4-inch valve from a gasoline pipeline was open near the DGS 105 additive tank and discharging into the sewer cup. The DGS 105 additive tank valves were immediately closed to stop the flow of gasoline into the box. The sewer cup had overflowed onto the soil located beneath the pipe rack and into a sewer drain between the pipe rack and railroad tracks. The sewer drain was accessed from the rail rack sump box north of the release extent and pipe box.

The overflow was generally contained inside the 41 foot by 97 foot bermed area surrounding the pipe rack as it flowed in a south, south-easterly direction (Figure 2). Approximately three vacuum truckloads of gasoline were collected from this area and the sump box located north of the pipe rack. An estimated 8,900 gallons of



recovered gasoline were placed in the slop tank. Clean-up activities outside the containment areas were not conducted because the spill generally was contained inside the bermed area.

The New Mexico Environment Department (NMED) Hazardous Waste Bureau and the Oil Conservation Division were notified of the spill via email (Appendix A) at 5:03 pm on May 8, 2017. No personnel injuries were reported, and no fires occurred due to this release. An initial written report (Form C-141) was completed on August 30, 2017 (Appendix A) and submitted to NMED. Photographs of the release area are provided in Appendix B.

#### **Characterization of the Release Material**

Laboratory analysis by the refinery determined the released material was gasoline, however no additional confirmation sampling was conducted. A copy of the gasoline Safety Data Sheet (SDS) is included in Appendix C.

# **Description of the Release Area**

The rail car loading rack and associated pipe rack are located on the Refinery's east side (Figure 1). The DGS 105 additive tank is located immediately north and adjacent to the pipe rack (Figure 2). The release occurred when a partially open 3/4-inch valve on the gasoline pipeline near the DGS 105 additive tank allowed gasoline to flow into the containment area beneath the additive tank and pipe rack. The gasoline flowed in a southerly to southeasterly direction towards the sewer sump next to the railroad loading rack.

## Site Conditions that Impacted the Release

Topographic features at the Refinery include high ground in the southeast that gradually decreases to lowland fluvial plain in the northwest. Elevations on the Refinery property range from 7,040 feet (ft) to 6,860 ft above mean sea level (amsl). The rail car loading area is approximately 6,935 ft amsl. Because the release was retained primarily within the containment area, the site topography directed the flow towards the sewer pump and not to other areas of the Refinery.

# **Remediation Activities**

Remediation activities consist of the actions taken by plant personnel to address the release and mitigate any further contact of the released material with the surrounding area including the subsurface and surficial waters

#### Remediation

The initial remediation consisted of recovering 8,900 gallons of gasoline using a vacuum truck. At the time of the release, a concrete pad was assumed to be beneath the pipe rack. Upon further inspection, it was determined that no concrete pad existed beneath the pipe rack; therefore, soil excavation was initiated. Following removal of the surface gasoline, approximately 153 tons of petroleum impacted soils below the pipe rack were excavated to an 18-inch depth in an area approximately 41 feet by 97 feet (Figure 3) in November of 2018. Three soil samples from the excavated soils were collected from the waste bins for waste characterization. The analytical results indicated that the soils were non-hazardous. An additional 15 soil samples were collected from the waste bins and analyzed for benzene only. The 15 samples were non-detect for benzene. The non-hazardous soils were transported as petroleum contaminated soils to Valencia Regional Landfill in Los Lunas, New Mexico. The waste



manifests are presented in Appendix D and the waste analytical results are presented in Appendix E. Soil confirmation samples following the excavation were not collected.

### **Assessment – Soil Confirmation Sampling Event**

#### **Soil Sampling**

Confirmation samples were not collected due to the release being largely contained by the sump and the containment area beneath the pipe rack. In addition, 15 soil samples were collected from excavated soils and sampled for benzene. All 15 samples were non-detect for benzene (Appendix E).

## **Confirmation sampling location selection**

As stated above, no confirmation samples were collected.

## Soil Sampling Analytical Results

As stated above, no soil confirmation samples were collected.

## **Subsurface Soil Conditions**

No soil borings or monitoring wells were installed during the investigation due to the release being largely contained by the sump and the containment area beneath the pipe rack.

#### **Groundwater Conditions**

A groundwater investigation was not conducted for the release due to the release being largely contained by the sump and the containment area beneath the pipe rack.

#### **Surface Water Conditions**

The release was contained in the sump and pipe rack containment. Therefore, the release did not reach surface water.

#### **Surface Air and Subsurface Vapor Conditions**

A vapor release was not associated with this product release.

## Conclusions and Recommendations

The release remediation consisted of recovering 8,900 gallons of gasoline. In November 2018, approximately 153 tons of petroleum impacted soils beneath the pipe rack were excavated to 18 inches below ground surface. Based on the analytical data from the waste sampling, it was not anticipated that the release extended further into the subsurface. Soil confirmation samples were not collected at that time. Without confirmation sampling though, this assumption cannot be confirmed. On March 13, 2019, there was a diesel release in the same area beneath the pipe rack. Therefore, MPC recommends that soil confirmation samples be collected to determine if additional soil excavation is necessary prior to installation of the proposed concrete containment pad beneath the pipe rack.

The six proposed soil confirmation sample locations are shown on (Figure 4). The actual sample locations will depend upon accessibility beneath the pipe rack. The soil samples will be analyzed for diesel range organics and

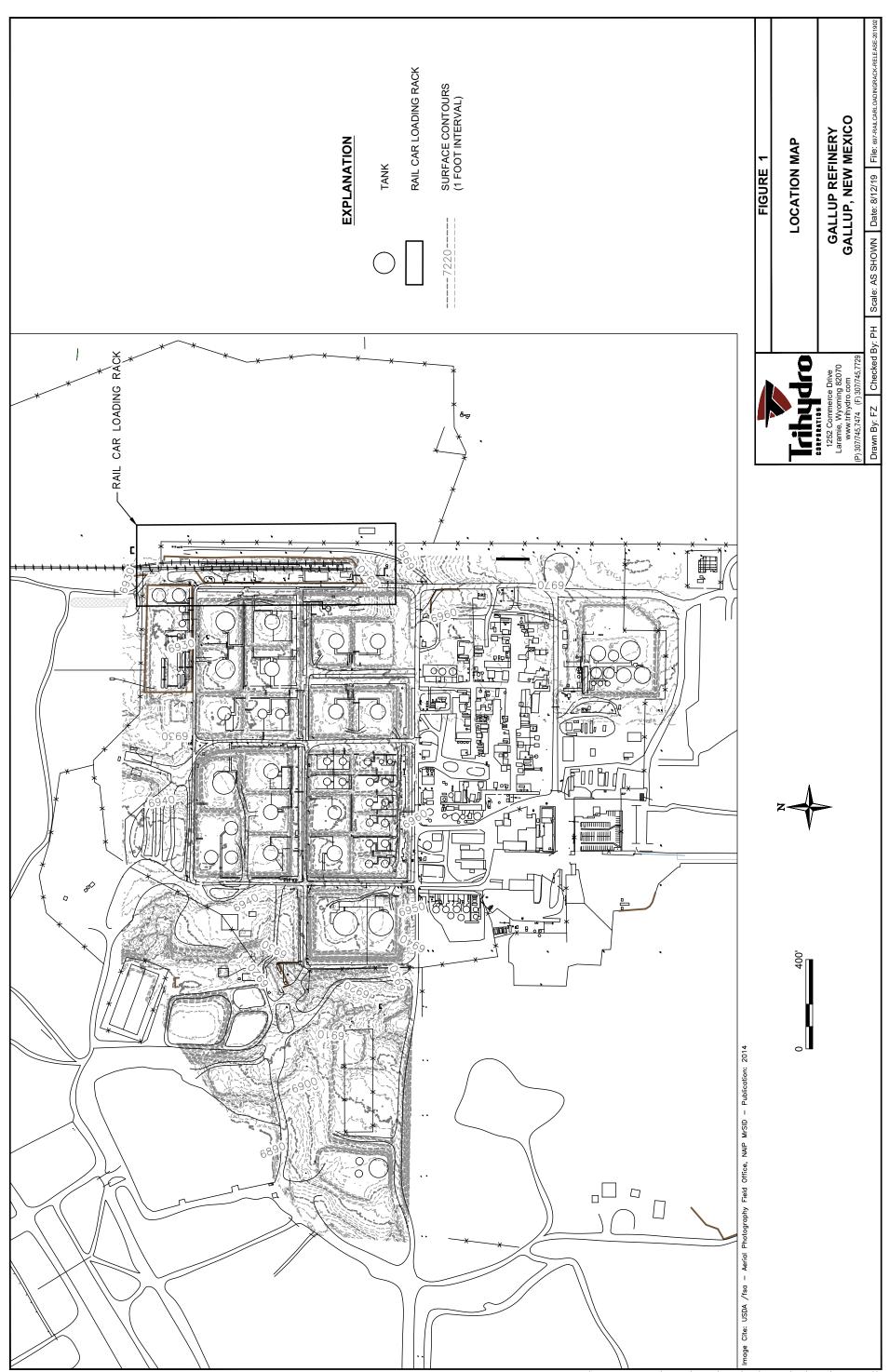


#### MRLS Response Action Report

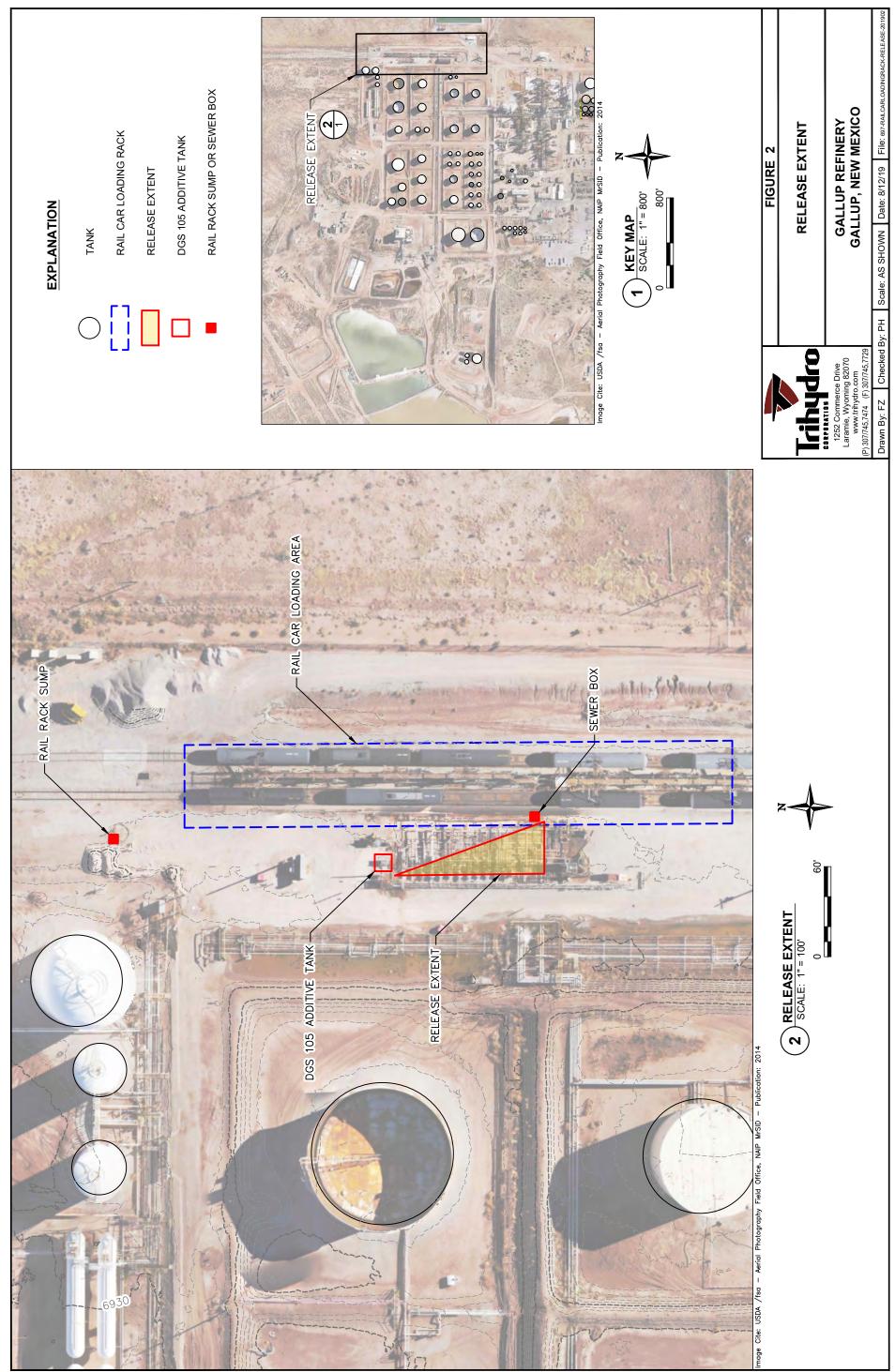
motor oil organics by EPA Method 8015M/D; gasoline range organics by EPA Method 8015D; polyaromatic hydrocarbons by EPA Method 8310; volatile organic compounds by EPA Method 8260B/1311; Toxicity Characteristic Leaching Procedure (TCLP) metals by EPA Method 6010B: TCLP mercury by EPA Method 7470/7471; and anions by EPA Method 300.0.

The soil confirmation sampling results will be compared to NMED screening levels to determine if further excavation is necessary. This comparison and the analytical results will be sent to NMED as a letter style report describing the sampling event, results, and further action if necessary.

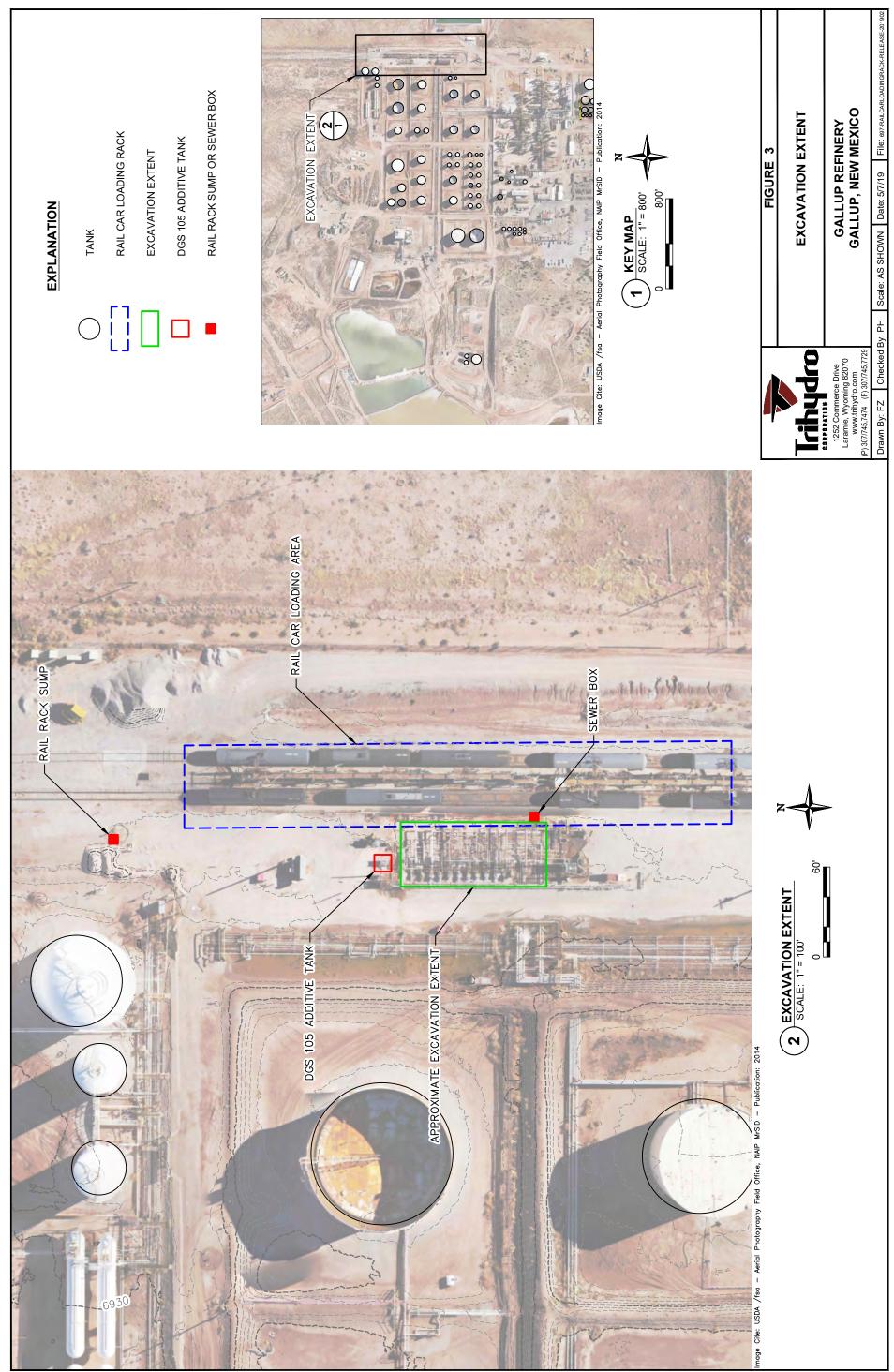
# Figures



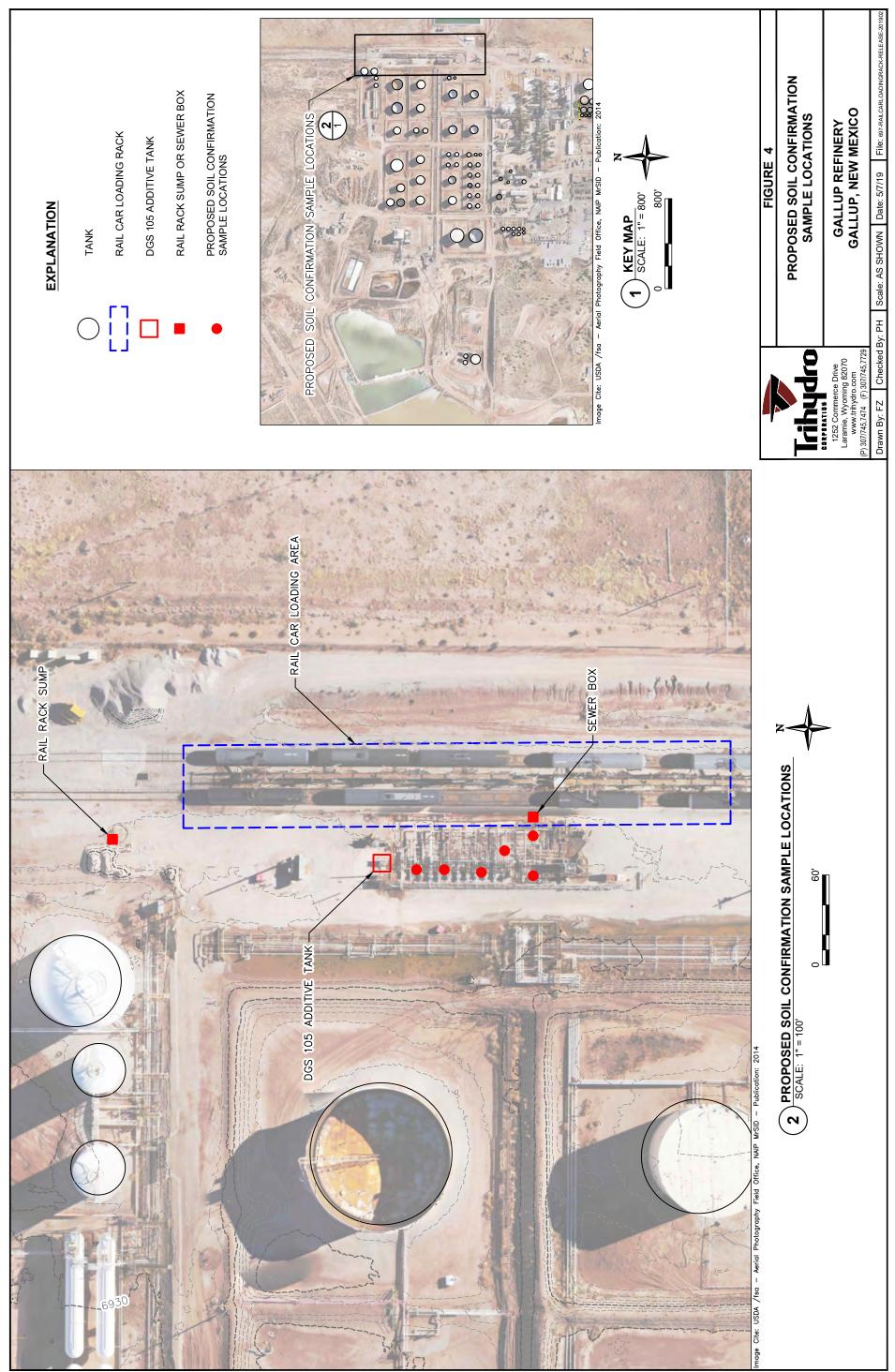
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Appendix A Notification Documents

From:	Johnson, Cheryl
To:	Carl Chavez; VanHorn, Kristen, NMENV; Cory.Smith@state.nm.us
Cc:	<u>Hains, Allen; Bailey, William</u>
Subject:	RRR Gasoline Leak
Date	Monday May 08 2017 5:03:48 PM
Attachments:	image001.git

#### Carl, Kristen:

Just a follow –up on the gasoline spill that occurred yesterday. The spill was discovered at 8:00 AM when the rail loader noticed gasoline pooling under the pipe rack at the railroad rack (booster pump area) and flowing into a sewer box. Some gasoline spilled to ground surface but contained within the area into the sewer boxes. Offsites supervisor was immediately notified and Kurtz fire department was also called out as a precautionary measure. After lowering level in the sewer box, it was discovered that a <sup>3</sup>/<sub>4</sub>" valve was in the open position on the DGS 105 additive tank. A total of 3 loads was vacuumed out of the sewer boxes – with an estimated total of 8900 gallons of 89 Octane recovered via vacuum truck. Clean up continues in this area.

No personal injuries and no fires reported with this incident.

Date of Incident: May 7, 2017

Discovered: 8:00AM

Area: RRR Booster pump area

Source: 3/4" valve off of the DGS additive tank system

Weather Conditions: Breezy, clear to partly cloudy

Checked wind conditions at 11:30am: 14mph SE (10 min average = 15 mph)

Latitude: 35°29'28.56" N Longitude: 108°25'24.24"W

If you have any questions or require further information please contact Mr. Bill Bailey, Environmental Supervisor (505) 726-9743.

сj

Cheryl Johnson Environmental Specialist

Western Refining - Gallup Refinery 92 Giant Crossing Road Gallup, NM 87301 505 722 0231 Direct 505 863-0930 Fax 505 722 3833 Main cheryl.johnson@wnr.com

#### Oil Conservation Division S 1220 South St. Francis Dr. Release Notification 37505 Release Notification 37505

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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						<b>OPERA</b>	ΓOR	XI	nitia	l Report		Final Report
Name of Company: Western Refining						Contact: Cheryl Johnson						
Address: I-40 Exit 39, Jamestown, NM 87347							e No: 505 722					
Facility Nat	me: Gallu	p Refinery				Facility T	ype: Petroleum	Refinery				
Surface Ow	ner			Mineral C	Owner			AP	I No.			
				LOC	A <u>TIO</u> I	N OF RE	LEASE					
Unit Letter	Section 28	Township 15N	Range 15W	Feet from the	North/	South Line	Feet from the	East/West Li	ine	County McKinley		
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				NAT	URE	OF REL						
Type of Rele	ase: Gasoli	ne spill (89 C	(octane)				Release: Estimat			Recovered: 89		
Source of Pa	alease Val	e left open to	sewer				ns of gasoline Hour of Occurrence			recovered via Hour of Disc		
Source of Re		e leit open to	Sewei				@ 0800 hours			@ 0800 hour		y.
Was Immedi	iate Notice	Given?				If YES, To				2 0000 11001	~	
			Yes	] No 🗌 Not R	equired		OCD; K VanHor	n/NMED-HW	B; B I	Powell/OCD;	C Sn	nith/NMED
By Whom? C	Cheryl John	son				Date and H	Iour: 05/07/17 @	2 1145 hrs				
Was a Water	course Rea	ched?	Yes 🕞	7 No		If YES, V	olume Impacting	the Watercours	se.			
If a Waterco	urse was In	pacted, Desci										
near the railc vacuuming o open positior and into a se Describe Are south, south- collected from analyzed in o the process a I hereby certi- regulations a health or the operations ha	ar loading a but sewer bo n). Valve(s) wer drain. <u>'</u> ea Affected easterly dir m this area bur Gallup F t the slop ta ify that the ll operators environmen ave failed to . In additio	rrea. Offsites x. When leve ) were immed <u>Temperature 4</u> and Cleanup 4 ection toward as well as from Facility Labor nk. Clean-up information g are required to th. The accep o adequately in n, NMOCD ad	superviso el in sewer iately clos 45°F, calm Action Tak s a sewer con the sump atory to ve activities iven above to report an tance of a nvestigate	ed that gasoline h r, Kurtz and Envir box was lowered ed at the gasoline , partly cloudy. N ken.*The overflow drain (Figure 1, #2 box located on t rify product. An were not immedia is true and comp nd/or file certain r C-141 report by th and remediate con of a C-141 report	ronmenta it was ol additive No person v was con 2). The c he north estimated ately initi- blete to the release no he NMO ntaminati	al were imme bserved that tank. The se mel injuries v ntained insid- overflow was side of the p d 8900 gallor iated as the n the best of my otifications an CD marked a ion that pose	diately notified. a 34" valve going ever cup overflow vere reported and e a concrete berm pumped out usin pe rack (Figure 1 hs of gasoline was hajority of the spi knowledge and u nd perform correct is "Final Report" a threat to ground perator of respon	Maintenance w into a sewer cu ved onto a cond no fires occur underneath the g a vacuum tru . #3). A samples picked up via ll was containen nderstand that trive actions for does not relieved water, surface sibility for con	vas als ip wa crete p red fr e pipe ck an le of t vacu d insi pursu r relea e the e wate nplian	so contacted to s draining (va pad underneat om this incide e rack which to d approximate the product wa um truck and ide a concrete tant to NMOC ases which ma operator of lia er, human hea nee with any o	o beg ilve w th the ent. hen fl ely th as col place pad. CD rul ay end ability ilth or other f	in vas in the pipe rack lowed in a ree loads was lected and ed back into les and danger public y should their the
							<u>OIL CON</u>	ISERVATI	[ON	DIVISIO	N	
Signature:												
Printed Name	e: Cheryl J	ohnson			· .	Approved by	Environmental S	pecialist:				
Title: Enviro	nmental Sp	ecialist			4	Approval Da	te:	Expirat	tion I	Date:		
E-mail Address: Cheryl.A.johnson@Andeavor.com				Conditions o	f Approval:			Attached				
Date: 8/3	30/2017		Pho	ne:505-722-0231								

\* Attach Additional Sheets If Necessary

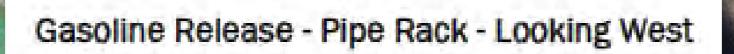


Appendix B Photographs of Release



Gasoline Release - Sewer Box - Looking South







Gasoline Release - Pipe Rack - Looking North

Appendix C Safety Data Sheet – Gasoline

# SAFETY DATA SHEET



# Western Refining Gasoline (All Grades)

# Section 1. Identification

- GHS product identifier Other means of
- : Western Refining Gasoline (All Grades)
- identification

- : Regular Unleaded Gasoline, Midgrade Unleaded Gasoline, Premium Unleaded
- Gasoline, Ethanol-Enhanced Gasoline, Precertified Gasoline

# Relevant identified uses of the substance or mixture and uses advised against

This SDS applies to: Federal Reformulated Gasoline, California Reformulated Gasoline, Wintertime Oxygenated Gasoline, Low RVP Gasoline and Conventional Gasoline.

Supplier's details	<ul> <li>Western Refining Company LP 123 W. Mills Avenue El Paso, TX 79901 Tel: 915-534-1488</li> </ul>
Emergency telephone number (with hours of operation)	CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3877 (24/7)
Section 2. Hazar	ds identification
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	<ul> <li>FLAMMABLE LIQUIDS - Category 2 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION [Fertility] - Category 2 TOXIC TO REPRODUCTION [Unborn child] - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 ASPIRATION HAZARD - Category 1 AQUATIC TOXICITY (ACUTE) - Category 3 AQUATIC TOXICITY (CHRONIC) - Category 2</li> </ul>
GHS label elements Hazard pictograms	



Signal word

: Danger



Hazard statements	: Highly flammable liquid and vapor. Causes serious eye irritation.
	Causes skin irritation.
	May cause genetic defects.
	May cause cancer.
	Suspected of damaging fertility or the unborn child.
	May be fatal if swallowed and enters airways.
	May cause drowsiness and dizziness.
	Causes damage to organs through prolonged or repeated exposure.
	Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Substance/mixture	: Mixture
Other means of	: Regular Unleaded Gasoline, Midgrade Unleaded Gasoline, Premium Unleaded
identification	Gasoline, Ethanol-Enhanced Gasoline, Precertified Gasoline

## CAS number/other identifiers : Not applicable

	0/		
ngredient name	%	CAS number	
Gasoline	90 - 100	86290-81-5	
Contains:			
Kylene	0.5 - 15	1330-20-7	
Toluene	0.5 - 15	108-88-3	
Ethyl Alcohol	0.1 - 10	64-17-5	
n-Hexane	0.5 - 5	110-54-3	
Benzene	0.1 - 4.9	71-43-2	
I,2,4-Trimethylbenzene	0.5 - 4	95-63-6	
Ethylbenzene	0.1 - 3	100-41-4	
laphthalene	0.1 - 2	91-20-3	
MSDS ( Km)	, , , , , , , , , , , , , , , , , , ,	2/	



# Section 3. Composition/information on ingredients

Cumene

98-82-8

0-0.1

Any concentration shown as a range is to protect confidentiality or is due to batch variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

# Section 4. First aid measures

Description of necessa	rry first aid measures
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if symptoms occur.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.
Skin contact	<ul> <li>In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.</li> </ul>
Ingestion	: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important sympto	oms/effects, acute and delayed
Potential acute health	effects
Eye contact	: Causes serious eye irritation.
Inhalation	<ul> <li>Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.</li> </ul>
Skin contact	: Causes skin irritation.
Ingestion	: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
Over-exposure signs/	symptoms
Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	<ul> <li>Adverse symptoms may include the following:</li> <li>nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations</li> </ul>



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# Section 4. First aid measures

	irritation redness reduced fatel weight
	reduced fetal weight
	increase in fetal deaths
	skeletal malformations
ngestion	: Adverse symptoms may include the following:
	reduced fetal weight
	increase in fetal deaths
	skeletal malformations

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large
	quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

# Section 5. Fire-fighting measures

Section 5. File-lig	
Extinguishing media	
Suitable extinguishing	: Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
media Unsuitable extinguishing media	Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical	Highly flammable liquid and vapor. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	<ul> <li>Decomposition products may include the following materials: carbon dioxide carbon monoxide</li> </ul>
Consist protoctive actions	Move containers from fire area if this can be done without risk. Use water spray to keep
Special protective actions for fire-fighters	fire-exposed containers cool. Fire-fighters should wear appropriate protective equipment and self-contained breathing
Special protective equipment for fire-fighters	apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	ntal release measures

Personal precautions, protective equipment and emergency procedures





### Section 6. Accidental release measures

For non-emergency	1	No action shall be taken involving any personal risk or without suitable training.
personnel		Evacuate surrounding areas. Keep unnecessary and unprotected personnel from
		entering. Do not touch or walk through spilled material. Shut off all ignition sources.
		No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide
		adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put
		on appropriate personal protective equipment.
For emergency responders	÷	If specialized clothing is required to deal with the spillage, take note of any information in
		Section 8 on suitable and unsuitable materials. See also the information in "For non-
		emergency personnel".
Environmental precautions	÷	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains
		and sewers. Inform the relevant authorities if the product has caused environmental
		pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to
		the environment if released in large quantities. Collect spillage.
Methods and materials for co	nt	ainment and cleaning up
Spill		Stop leak if without risk. Move containers from spill area. Use spark-proof tools and
•		and the second

Spill
 Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

# Section 7. Handling and storage

Precautions for safe handling	
Protective measures	: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.



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# Section 8. Exposure controls/personal protection

### **Control parameters**

**Occupational exposure limits** 

ngredient name	Exposure limits
asoline	ACGIH TLV (United States, 3/2012).
	TWA: 300 ppm 8 hours.
	TWA: 890 mg/m <sup>3</sup> 8 hours.
	STEL: 500 ppm 15 minutes. STEL: 1480 mg/m <sup>3</sup> 15 minutes.
ylene	ACGIH TLV (United States, 3/2012).
yiche	STEL: 651 mg/m <sup>3</sup> 15 minutes.
	STEL: 150 ppm 15 minutes.
	TWA: 434 mg/m <sup>3</sup> 8 hours.
	TWA: 100 ppm 8 hours.
	OSHA PEL (United States, 6/2010).
	TWA: 100 ppm 8 hours.
	TWA: 435 mg/m <sup>3</sup> 8 hours.
oluene	NIOSH REL (United States, 6/2009).
	STEL: 560 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes.
	TWA: 375 mg/m <sup>3</sup> 10 hours.
	TWA: 100 ppm 10 hours.
	OSHA PEL Z2 (United States, 11/2006).
	AMP: 500 ppm 10 minutes.
	CEIL: 300 ppm
	TWA: 200 ppm 8 hours.
	ACGIH TLV (United States, 3/2012).
	TWA: 20 ppm 8 hours.
thyl Alcohol	ACGIH TLV (United States, 3/2012).
	STEL: 1000 ppm 15 minutes.
	NIOSH REL (United States, 6/2009). TWA: 1900 mg/m <sup>3</sup> 10 hours.
	TWA: 1900 mg/m 10 hours.
	OSHA PEL (United States, 6/2010).
	TWA: 1900 mg/m <sup>3</sup> 8 hours.
	TWA: 1000 ppm 8 hours.
-Hexane	ACGIH TLV (United States, 3/2012). Absorbed through skin.
	TWA: 50 ppm 8 hours.
	NIOSH REL (United States, 6/2009).
	TWA: 180 mg/m <sup>3</sup> 10 hours.
	TWA: 50 ppm 10 hours.
	OSHA PEL (United States, 6/2010). TWA: 1800 mg/m <sup>3</sup> 8 hours.
	TWA: 500 ppm 8 hours.
077000	ACGIH TLV (United States, 3/2012). Absorbed through skin.
lenzene	STEL: 8 mg/m <sup>3</sup> 15 minutes.
	STEL: 2.5 ppm 15 minutes.
	TWA: 1.6 mg/m <sup>3</sup> 8 hours.
	TWA: 0.5 ppm 8 hours.
	NIOSH REL (United States, 6/2009). STEL: 1 ppm 15 minutes.
	TWA: 0.1 ppm 10 hours.
	OSHA PEL (United States, 6/2010).
	STEL: 5 ppm 15 minutes.
	TWA: 1 ppm 8 hours.
	OSHA PEL Z2 (United States, 11/2006).
	AMP: 50 ppm 10 minutes. CEIL: 25 ppm
	TWA: 10 ppm 8 hours.
	ACGIH TLV (United States, 3/2012).
,2,4-Trimethylbenzene	TWA: 123 mg/m <sup>3</sup> 8 hours.
· · · · · · · · · · · · · · · · · · ·	TWA: 25 ppm 8 hours.
	NIOSH REL (United States, 6/2009).
	TWA: 125 mg/m <sup>3</sup> 10 hours.
	TWA: 25 ppm 10 hours.



# Section 8. Exposure controls/personal protection

	OSHA PEL 1989 (United States, 3/1989).
	TWA: 25 ppm 8 hours.
	TWA: 125 mg/m <sup>3</sup> 8 hours.
Ethylbenzene	ACGIH TLV (United States, 3/2012).
	TWA: 20 ppm 8 hours.
	NIOSH REL (United States, 6/2009).
	STEL: 545 mg/m <sup>3</sup> 15 minutes.
	STEL: 125 ppm 15 minutes.
	TWA: 435 mg/m³ 10 hours.
	TWA: 100 ppm 10 hours.
	OSHA PEL (United States, 6/2010).
	TWA: 435 mg/m³ 8 hours.
	TWA: 100 ppm 8 hours.
Naphthalene	ACGIH TLV (United States, 3/2012). Absorbed through skin.
	STEL: 79 mg/m <sup>3</sup> 15 minutes.
	STEL: 15 ppm 15 minutes.
	TWA: 52 mg/m <sup>3</sup> 8 hours.
	TWA: 10 ppm 8 hours.
	NIOSH REL (United States, 6/2009).
	STEL: 75 mg/m <sup>3</sup> 15 minutes.
	STEL: 15 ppm 15 minutes.
	TWA: 50 mg/m <sup>3</sup> 10 hours.
	TWA: 10 ppm 10 hours. OSHA PEL (United States, 6/2010).
	TWA: 50 mg/m <sup>3</sup> 8 hours.
	TWA: 10 ppm 8 hours.
	ACGIH TLV (United States, 3/2012).
Cumene	TWA: 50 ppm 8 hours.
	NIOSH REL (United States, 6/2009). Absorbed through skin.
	TWA: 245 mg/m <sup>3</sup> 10 hours.
	TWA: 50 ppm 10 hours.
	OSHA PEL (United States, 6/2010). Absorbed through skin.
	TWA: 245 mg/m <sup>3</sup> 8 hours.
	TWA: 50 ppm 8 hours.

ngredient name	Exposure limits
Gasoline	ACGIH TLV (United States, 3/2012). TWA: 300 ppm 8 hours. TWA: 890 mg/m <sup>3</sup> 8 hours. STEL: 500 ppm 15 minutes. STEL: 1480 mg/m <sup>3</sup> 15 minutes.
(ylene	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 435 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 100 ppm 8 hours. LMPE-CT: 655 mg/m <sup>3</sup> 15 minutes. LMPE-CT: 150 ppm 15 minutes.
Toluene	NOM-010-STPS (Mexico, 9/2000). Absorbed through skin. LMPE-PPT: 188 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 50 ppm 8 hours.
Ethyl Alcohol	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 1900 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 1000 ppm 8 hours.
n-Hexane	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 176 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 50 ppm 8 hours.
Benzene	NOM-010-STPS (Mexico, 9/2000). LMPE-CT: 16 mg/m <sup>3</sup> 15 minutes. LMPE-CT: 5 ppm 15 minutes. LMPE-PPT: 3.2 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 1 ppm 8 hours.
I,2,4-Trimethylbenzene	NOM-010-STPS (Mexico, 9/2000). LMPE-CT: 170 mg/m <sup>3</sup> 15 minutes. LMPE-CT: 35 ppm 15 minutes. LMPE-PPT: 125 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 25 ppm 8 hours.



# Section 8. Exposure controls/personal protection

Ethylbenzene	NOM-010-STPS (Mexico, 9/2000). LMPE-CT: 545 mg/m <sup>3</sup> 15 minutes. LMPE-CT: 125 ppm 15 minutes. LMPE-PPT: 435 mg/m <sup>3</sup> 8 hours.
Naphthalene	LMPE-PPT: 100 ppm 8 hours. <b>NOM-010-STPS (Mexico, 9/2000).</b> LMPE-CT: 75 mg/m <sup>3</sup> 15 minutes. LMPE-CT: 15 ppm 15 minutes. LMPE-PPT: 50 mg/m <sup>3</sup> 8 hours. LMPE-PPT: 10 ppm 8 hours.

Appropriate engineering : controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof
Environmental exposure : controls	<ul> <li>ventilation equipment.</li> <li>Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.</li> </ul>
Individual protection measures	
Hygiene measures :	
Hygiene measures .	Wash hands, forearms and face thoroughly after handling chemical products, before
	eating, smoking and using the lavatory and at the end of the working period. Ensure
Evolface protection	that eyewash stations and safety showers are close to the workstation location. Safety eyewear complying with an approved standard should be used when a risk
Eye/face protection :	assessment indicates this is necessary to avoid exposure to liquid splashes, mists,
	gases or dusts. If contact is possible, the following protection should be worn, unless
	the assessment indicates a higher degree of protection: chemical splash goggles.
Skin protection	
Hand protection	· Other interviewer along compliant with an approved standard about the
	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Body protection	Personal protective equipment for the body should be selected based on the task being
	performed and the risks involved and should be approved by a specialist before
	handling this product. When there is a risk of ignition from static electricity, wear anti-
	static protective clothing. For the greatest protection from static discharges, clothing
Other ality systemion	should include anti-static overalls, boots and gloves.
Other skin protection :	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a
	specialist before handling this product.
Respiratory protection :	Use a properly fitted, air-purifying or supplied air respirator complying with an approved
Nookumen) herees	standard if a risk assessment indicates this is necessary. Respirator selection must be
	based on known or anticipated exposure levels, the hazards of the product and the safe
F	working limits of the selected respirator.
Section 9 Physical	and chamical

# Section 9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Color	: Colorless to yellow.
Odor	: Petroleum.
Odor threshold	: Not available.



# Section 9. Physical and chemical properties

	5	• •
F E E E	pH Melting point Boiling point Flash point Burning time Burning rate Evaporation rate	<ul> <li>Not available.</li> <li>Not available.</li> <li>Not available.</li> <li>Closed cup: &lt;-40°C (&lt;-40°F) [Tagliabue.]</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not available.</li> </ul>
L () F S	Flammability (solid, gas) Lower and upper explosive flammable) limits /apor pressure /apor density Relative density Solubility Solubility in water	<ul> <li>Not available.</li> <li>Lower: 1.3% Upper: 7.6%</li> <li>34.5 to 103.4 kPa (258.55 to 775.66 mm Hg) [20°C] (5 psi - 15 psi @ 37.8°C (100°F))</li> <li>3 to 4 [Air = 1]</li> <li>0.7 to 0.8</li> <li>Insoluble in the following materials: cold water and hot water.</li> <li>Not available.</li> </ul>
	Partition coefficient: n- octanol/water Auto-ignition temperature Decomposition temperature SADT /iscosity Section 10. Stabilit	: Not available. : <1 SUS @ 37.8°C (100°F)
F	Reactivity	<ul> <li>Y and reactivity</li> <li>No specific test data related to reactivity available for this product or its ingredients.</li> <li>The product is stable.</li> </ul>
	Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
(	Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
	ncompatible materials	Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
	Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.



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# Section 11. Toxicological information

### Information on toxicological effects

Product/ingredient name	Result		Species		Dose	Exposure
Gasoline	LD50 Oral		Rat		13.6 g/kg	-
Xylene	LC50 Inhalation Gas.		Rat		5000 ppm	4 hours
-	LD50 Oral		Rat		4300 mg/kg	-
Toluene	LC50 Inhalation Vapor		Rat		49 g/m³	4 hours
	LD50 Oral		Rat		636 mg/kg	-
Ethyl Alcohol	LC50 Inhalation Vapor		Rat		124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral		Rat		7 g/kg	-
n-Hexane	LC50 Inhalation Gas.		Rat		48000 ppm	4 hours
	LD50 Oral		Rat		15840 mg/kg	-
Benzene	LD50 Oral		Rat		930 mg/kg	-
1,2,4-Trimethylbenzene	LC50 Inhalation Vapor		Rat		18000 mg/m <sup>3</sup>	4 hours
		LD50 Oral		Rat	5 g.	/kg-
Ethylbenze	ne	LD50 Dermal		Rabbit	>5000 mg	/kg-
		LD50 Oral		Rat	3500 mg	/kg-
Naphthale	ne	LD50 Dermal		Rabbit	>20 g	/kg-
		LD50 Oral		Rat	490 mg	/kg-
Cumene	LC50 Inhalation Vapor		Rat		39000 mg/m <sup>3</sup>	4 hours
	LD50 Oral		Rat		1400 mg/kg	-

Product/ingredient na	ame	Result	Species	Score	Exposure	Observation
Xylene		Eyes - Mild irritant	Rabbit	-	87 mg	-
,		Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
		Skin - Mild irritant	Rat	-	8 hours 60 µL	-
		Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
		Skin - Moderate irritant	Rabbit	-	100%	-
Toluene		Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
		Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
		Eyes - Mild irritant	Rabbit	-	870 µg	-
		Eves - Severe irritant	Rabbit	-	24 hours 2 mg	-
		Skin - Mild irritant	Pig	-	24 hours 250 µL	-
		Skin - Mild irritant	Rabbit	-	435 mg	-
		Skin - Moderate irritant	Rabbit	-	500 mg	-
Ethyl Alcohol		Eyes - Moderate irritant	Rabbit	-	100 µĽ	-
,		Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
		Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
		Eyes - Moderate irritant	Rabbit	-	0.066666667	-
		-			minutes 100 mg	
		Eyes - Severe irritant	Rabbit	-	500 mg	-
		Skin - Mild irritant	Rabbit	-	400 mg	-
n-Hexane		Eyes - Mild irritant	Rabbit	-	10 mg	-
Benzene		Eyes - Moderate irritant	Rabbit	-	88 mg	-
		Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
		Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
		Skin - Mild irritant	Rat	-	8 hours 60 µL	-
		Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Eth	iylbenzene	5			- 500 mg	
		Skin - Mild irritant			<ul> <li>24 hours 15 mg</li> </ul>	
Na	aphthalene				- 495 mg	
		Skin - Severe irritant			- 24 hours 0.05 mL	
	Cumene	Eyes - Mild irritant			<ul> <li>24 hours 500 mg</li> </ul>	
		Skin - Mild irritant			<ul> <li>24 hours 10 mg</li> </ul>	
		Eyes - Mild irritant	Rabbi		- 86 mg	
		Skin - Moderate irritant	Rabbi	t	<ul> <li>24 hours 100 mg</li> </ul>	-

**Sensitization** 

There is no data available.

**Mutagenicity** 

There is no data available.



### 11/17

# Section 11. Toxicological information

<b>Classification</b>				
Product/ingredient name	OSHA	IARC	ACGIH	NTP
Xylene	-	3	A4	-
Toluene	-	3	A4	
Benzene	+	1	A1	Known to be a human carcinogen.
Ethylbenzene	-	2B	A3	
Naphthalene	-	2B	A4	Reasonably anticipated to be a human carcinogen.
Cumene	-	2B	-	-

### **Reproductive toxicity**

There is no data available.

### **Teratogenicity**

There is no data available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
n-Hexane	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Specific target organ toxicity (repeated exposure)			

### Name Category **Target organs** Route of exposure Toluene Category 2 Not determined Not determined Category 2 n-Hexane Not determined Not determined Benzene Category 1 Not determined Not determined

### Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
n-Hexane	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure Potential acute health effects	Dermal contact. Eye contact. Inhalation. Ingestion.
Eye contact	Causes serious eye irritation.
Inhalation	Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
Skin contact	Causes skin irritation.
Ingestion	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness





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Inhalation	: Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

ts	and also chronic effects from short and long term exposure
:	No known significant effects or critical hazards.
:	No known significant effects or critical hazards.
:	No known significant effects or critical hazards.
	No known significant effects or critical hazards.
	<b>S</b> Causes damage to organs through prolonged or repeated exposure.
	May cause cancer. Risk of cancer depends on duration and level of exposure.
1	May cause genetic defects. Suspected of damaging the unborn child. No known significant effects or critical hazards. Suspected of damaging fertility.
	: : : : : : :

### Numerical measures of toxicity Acute toxicity estimates

Acute toxicity estimates	
Route	ATE value
Oral	10837.6 mg/kg
Dermal	7333.3 mg/kg
Inhalation (gases)	33333.3 ppm
Inhalation (vapors)	202 mg/L



### 13/17

# Section 12. Ecological information

### **Toxicity**

Product/ingredient nam	1e	Result	Species	Exposure
Xylene		Acute IC50 10 mg/L	Algae	72 hours
		Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
		Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Toluene		Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
		Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
		Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus	48 hours
			pseudolimnaeus - Adult	
		Acute EC50 6000 μg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
		Acute LC50 5500 µg/l Fresh water	(Fledgling, Hatchling, Weanling) Fish - Oncorhynchus kisutch - Fry	96 hours
		Chronic NOEC 500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
		Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Ethyl Alcohol		Acute EC50 17.921 mg/L Marine water	Algae - Ulva pertusa	96 hours
, ,		Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
		Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franchiscana -	48 hours
			Larvae	
		Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
		Chronic NOEC 4.995 mg/L Marine water	Algae - Ulva pertusa	96 hours
		Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
n-Hexane		Acute LC50 113000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
Benzene		Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
		Acute EC50 1600000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
		Acute EC50 9230 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
		Acute LC50 21000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
		Acute LC50 5.28 ul/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
		Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile	4 weeks
			(Fledgling, Hatchling, Weanling)	4 WCCR3
1,2,4-Trimethylbenzene		Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pectinicrus -	48 hours
, , , , , , , , , , , , , , , , , , ,			Adult	
Ethylt	benzene	Acute LC50 22.4 mg/L Fresh water	Fish - Tilapia zillii	96 hours
-		Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
		Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
		Acute EC50 2970 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
		Acute LC50 5200 µg/l Marine water	Crustaceans - Americamysis bahia	48 hours
		Acute LC50 4200 µg/l Fresh water		96 hours
Naph	hthalene	Chronic NOEC 1000 µg/l Fresh water		96 hours
itapi		Acute EC50 1600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
		Acute LC50 2350 µg/l Marine water		48 hours
(	Cumene	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
		Acute EC50 2600 µg/l Fresh water		72 hours
		Acute EC50 11200 µg/l Fresh water		48 hours
		Acute LC50 7400 µg/l Fresh water	Crustaceans - Artemia sp Nauplii	48 hours
		Acute LC50 2700 µg/l Fresh water		96 hours
		Acute LOJU ZI UU HUI FIESH Water	rish - Oncontynchus Htykiss	

### Persistence and degradability

There is no data available.

### **Bioaccumulative potential**

	BEF	Petential
2 to 7	-	high
3.16	-	low
2.69	8.317637711	low
-0.32	-	low
3.9	-	low
2.13	4.265795188	low
3.8	120.226443461	low
3.1	-	low
3.3	85.11380382	low
3.66	35.481338923	low
	2 to 7 3.16 2.69 -0.32 3.9 2.13 3.8 3.1 3.3	2 to 7       -         3.16       -         2.69       8.317637711         -0.32       -         3.9       -         2.13       4.265795188         3.8       120.226443461         3.1       -         3.3       85.11380382



## Section 12. Ecological information

### Mobility in soil Soil/water partition

coefficient (Koc)

: There is no data available.

### Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

Disposal methods	: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil
	thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Xylene	1330-20-7	Listed	U239
Benzene	71-43-2	Listed	U019
Naphthalene	91-20-3	Listed	U165

## Section 14. Transport information

DOT Classification	IMDG	ΙΑΤΑ
UN1203	UN1203	UN1203
GASOLINE	GASOLINE. Marine pollutant (n-Hexane, Benzene)	GASOLINE
3	3	3
II	II	II
Yes.	Yes.	No.
-	Emergency schedules (EmS) F-E, S-E	-
	UN1203 GASOLINE 3 J	UN1203 GASOLINE GASOLINE. Marine pollutant (n-Hexane, Benzene) 3 II Yes. II - Emergency schedules (EmS)

**AERG** : 128



## Section 14. Transport information

Special precautions for user	:	<b>Transport within user's premises:</b> always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according	÷	Not available

to Annex II of MARPOL 73/78 and the IBC Code

### 73/78 and the IBC Code Section 15. Regulatory information TSCA 8(a) PAIR: Naphthalene **U.S. Federal regulations** TSCA 8(a) CDR Exempt/Partial exemption: Not determined United States inventory (TSCA 8b): Not determined. Clean Water Act (CWA) 307: Toluene; Benzene; Ethylbenzene; Naphthalene Clean Water Act (CWA) 311: Toluene; Xylene; Benzene; Ethylbenzene; Naphthalene : Listed **Clean Air Act Section 112** (b) Hazardous Air **Pollutants (HAPs)** : Not listed **Clean Air Act Section 602 Class I Substances** : Not listed **Clean Air Act Section 602 Class II Substances** : Not listed **DEA List I Chemicals** (Precursor Chemicals) : Listed **DEA List II Chemicals** (Essential Chemicals) SARA 302/304 **Composition/information on ingredients** No products were found. **SARA 304 RQ** : Not applicable. SARA 311/312 Classification : Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard **Composition/information on ingredients** Name % **Reactive** Fire Sudden Immediate Delayed hazard release of (acute) (chronic) health pressure health

					nazard	nazaro
Gasoline	90 - 100	Yes.	No.	No.	No.	No.
Xylene	5 - 15	Yes.	No.	No.	Yes.	No.
Toluene	5 - 15	Yes.	No.	No.	Yes.	Yes.
Ethyl Alcohol	0.1 - 10	Yes.	No.	No.	Yes.	No.
n-Hexane	0.5 - 5	Yes.	No.	No.	Yes.	Yes.
Benzene	0.1 - 4.9	Yes.	No.	No.	Yes.	Yes.
1,2,4-Trimethylbenzene	0.5 - 4	Yes.	No.	No.	Yes.	No.
Ethylbenzene	0.1 - 3	Yes.	No.	No.	Yes.	Yes.
Naphthalene	0.1 - 2	No.	No.	No.	Yes.	Yes.
Cumene	0 - 0.1	Yes.	No.	No.	Yes.	Yes.



### **SARA 313**

	Product name	CAS number	%
Form R - Reporting requirements	Xylene	1330-20-7	0.5 - 15
	Toluene	108-88-3	0.5 - 15
	n-Hexane	110-54-3	0.5 - 5
	Benzene	71-43-2	0.1 - 4.9
	1,2,4-Trimethylbenzene	95-63-6	0.5 - 4
	Ethylbenzene	100-41-4	0.1 - 3
	Naphthalene	91-20-3	0.1 - 2
Supplier notification	Xylene	1330-20-7	0.5 - 15
	Toluene	108-88-3	0.5 - 15
	n-Hexane	110-54-3	0.5 - 5
	Benzene	71-43-2	0.1 - 4.9
	1,2,4-Trimethylbenzene	95-63-6	0.5 - 4
	Ethylbenzene	100-41-4	0.1 - 3
	Naphthalene	91-20-3	0.1 - 2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts: The following components are listed: Toluene; Xylene; Ethyl Alcohol; n-Hexane;<br/>Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; NaphthaleneNew York: The following components are listed: Toluene; Xylene; n-Hexane; Benzene;
- New Jersey
- Ethylbenzene; Naphthalene; Cumene
  The following components are listed: Toluene; Xylene; Ethyl Alcohol; n-Hexane; Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; Naphthalene; Cumene
- Pennsylvania
- The following components are listed: Gasoline; Toluene; Xylene; Ethyl Alcohol; n-Hexane; Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; Naphthalene; Cumene

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	•	level	Maximum acceptable dosage level
Toluene	No.	Yes.		7000 μg/day (ingestion) 13000 μg/day (inhalation)
Benzene	Yes.			24 μg/day (ingestion) 49 μg/day (inhalation)
Ethylbenzene	Yes.		41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Naphthalene Cumene	Yes. Yes.		54 µg/day (inhalation) Yes. No.	No. No.

### Mexico

Classification



### International regulations



# Section 15. Regulatory information

International lists	: Australia inventory (AICS): All components are listed or exempted.
	China inventory (IECSC): Not determined.
	Japan inventory: Not determined.
	Korea inventory: All components are listed or exempted.
	Malaysia Inventory (EHS Register): Not determined.
	New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
	Philippines inventory (PICCS): All components are listed or exempted.
	Taiwan inventory (CSNN): Not determined.
Chemical Weapons	: Not listed
Convention List Schedule	
I Chemicals	
Chemical Weapons	
	: Not listed
Convention List Schedule	
II Chemicals	
Chemical Weapons	: Not listed
Convention List Schedule	
III Chemicals	

# Section 16. Other information

**History** 

Date of issue mm/dd/yyyy	: 06/30/2013
Date of previous issue	: 05/30/2012
Version	: 4
Revised Section(s)	: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
Prepared by	KMK Regulatory Services Inc.
Key to abbreviations	: ATE = Acute Toxicity Estimate
	BCF = Bioconcentration Factor
	GHS = Globally Harmonized System of Classification and Labelling of Chemicals
	IATA = International Air Transport Association
	IBC = Intermediate Bulk Container
	IMDG = International Maritime Dangerous Goods
	LogPow = logarithm of the octanol/water partition coefficient
	MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Appendix D Waste Manifest

NON-HAZARDOUS 1. Generator's US EPA ID WASTE MANIFEST NMD00033321	1			Manifest Document Np:	0226466	2.	Page 1 of 1
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINI	INC					-	
92 GIANT CROSSING ROAD	ING						
92 GIANT CROSSING ROAD GALLUP, NM 87301				-			
4. Generator's 505 726 9721							
5. Transporter 1 Company Name 6.		US EPA ID Number		A. State Trans	porter's ID		
Advanced Chemical Transport Inc./DBA ACTENVIRO		CAR000070540	)	B. Transporter			
7. Transporter 2 Company Name 8.		US EPA ID Number					
A. Transporter 2 Company Name	h.	US EPA ID Number		C. State Trans			
				D. Transporter			
9. Designated Facility Name and Sile Address WASTE MANAGEMENT VALENCIA REGIONAL LAND	SFILL	US EPA ID Number		E. State Facilit	y's ID		
1600 NM HWY 6 - 40 LANDFILL ROAD		SWM #013230(	SP)				
LOS LUNAS, NM 87031		5 1111 10102000	5.1	F. Facility's Ph	one		
505-917-6232	_						
11. WASTE DESCRIPTION			0	ontainers	13. Total		1 U
			No.	Туре	Quantity	×	Wt./
Non-RCRA/Non-DOT Regulated Material Solid (P	CS FF	ROM			Ellet	t <del>a</del>	
RAIL PIPE HYDROVAC)			1	OM	9.	.50	TON
			1	1	19900 1		
b.					1000		
C.			-				
с.							
)			P		7		
d.		personal personal and		A Company I among	N t		
		REC	EL.	VED	1		
G. Additional Descriptions for Materials Listed Above Project No. 1) 104423NM WEW	lumber				odes for Wastes Liste	d Above	
	lumber	189149D		#: 102201466	<i>y</i>		
1) 104423NM WEW	lumber	189149D		#: 102201466	odes for Wastes Lister		
104423NM WEW  15. Special Handling Instructions and Additional Information	lumber	189149D		#: 102201466	0523	. 20	-
1) 104423NM WEW	lumber	189149D		#: 102201466	0523	. 20	-
104423NM WEW  15. Special Handling Instructions and Additional Information	lumber	189149D		#: 102201466	<i>y</i>	. 20	-
104423NM WEW  15. Special Handling Instructions and Additional Information	lumber	189149D		#: 102201466	0523	. 20	-
104423NM WEW  15. Special Handling Instructions and Additional Information	lumber	189149D		#: 102201466	0523	. 20	-
1) 104423NM WEW 15. Special Handling Instructions and Additional Information hour emergency contact: CHEMTREC 800-424-9300		189149 MAR	ocument	#: 102204468 R 2 C	0523	. 20	-
104423NM WEW  15. Special Handling Instructions and Additional Information	shipment a	189149 MAR	ocument	#: IDB20III66	0523	. 20	-
1) 104423NM WEW 15. Special Handling Instructions and Additional Information hour emergency contact: CHEMTREC 800-424-9300 16. GENERATOR'S CERTIFICATION: I hereby certily that the contents of this st	shipment a	189149 MAR	ocument	#: IDB20III66	0523	. 20	13 irm
15. Special Handling Instructions and Additional Information hour emergency contact: CHEMTREC 800-424-9300  16. GENERATOR'S CERTIFICATION: I hereby certily that the contents of this st in proper condition for transport. The materials described on this manifest are	shipment ar	189149 MAR	ocument	#: IDB20III66	0523	.20 38 <sup>(</sup> 110	-
104423NM WEW 15. Special Handling Instructions and Additional Information hour emergency contact: CHEMTREC 800-424-9300 16. GENERATOR'S CERTIFICATION: I hereby certily that the contents of this st	shipment ar	189149 MAR	ocument	#: IDB20III66	0523	. 20	13 irm
104423NM WEW	shipment ar	189149 MAR	ocument	#: IDB20III66	0523	.20 38 <sup>(</sup> 110	13 urn Date
15. Special Handling Instructions and Additional Information hour emergency contact: CHEMTREC 800-424-9300  16. GENERATOR'S CERTIFICATION: I hereby certily that the contents of this st in proper condition for transport. The materials described on this manifest are	shipment ar	189149 MAR	ocument	#: IDB20III66	0523	.20 38 <sup>(</sup> 110	13 urn Date
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104423NM WEW	shipment ai e not subje	189149 MAR	ocument	#: IDB20III66	0523	· 20 88 1100 Month 01 Month 01	Date Day Date Day Za Date
104423NM WEW	shipment ai e not subje	189149 MAR	ocument	#: IDB20III66	0523	· 20 88 1100 Month 01 Month 01	Date Day Date Day Za Date
104423NM WEW	shipment ai e not subje	189149 MAR	ocument	#: IDB20III66	0523	· 20 88 1100 Month 01 Month 01	Date Day Date Day Za Date
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104423NM WEW	shipment a e not subje	189149 MAR	Ded and are a regulations	Roc	DS 23 H E Son	, 20 88 100 Month 01 Month 01 Month	Date Day 22 Date Day 22 Date Day
104423NM WEW	shipment ar e not subje	189149 MAR	Ded and are a regulations	#: IDB20III66	DS 23 H E Son	· 20 88 1100 Month 01 Month	Date Day 22 Date Day 22 Date Day Date Day
104423NM WEW	shipment ar e not subje	189149 MAR	Ded and are a regulations	Roc	DS 23 H E Son	, 20 88 100 Month 01 Month 01 Month	Date Day 22 Date Day 22 Date Day

WASTE MANIFEST	1. Generator's US EPA ID No.			Document No.	182141	2. Page 1 of
3, Generator's Name and Mailing Address	EST GALLUP REFINING				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2 GIANT CROSSING ROAD 3ALLUP, NM 87301						
505 726 9721						
4. Generator's Phone ( )				1	A share and	
5 Transporter 1 Company Name apport Inc	DEA ACTENVIRO	US EPA ID Number	N I	A. State Trans	porter's ID	
and the second				B. Transporter		
7. Transporter 2 Company Name	8.	US EPA ID Number		C. State Trans		
				D. Transporter		
9. Designated Facility Name and Site Address	ROAD			E. State Facilit	y's ID	
OS LUNAS, NM 87031	(Cost the)	SWM #013230	SP)			
505-917-6232				F. Facility's Ph	one	
			1			-
11. WASTE DESCRIPTION			10.00	ontainers	13. Total	14. Unit
on-RCRA/Non-DOT Regulati	ed Material Golid (PCS	FROM	No.	Туре	Quantity	Wt./Vc
RAIL PIPE HYDROVAC)			1	CM	1.011	1 OM
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b.			1			
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C.			-			-
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d.						-
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				7		
				Por	20	
15. Special Handling Instructions and Additional i	Information 0-424-9300			Rec	20	
15. Special Handling Instructions and Additional I	Information			Ruc	20	
15. Special Handling Instructions and Additional	Information 0-424-9300			Rec	20	
16. GENERATOR'S CERTIFICATION: 1 hereby	certify that the contents of this shiome	ant are fully and accurately describ	ed and are in		20	
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NON-HAZARDOUS WAS

	NON-HAZARDOUS WASTE MANIFEST	NMD000333211			Manifest Document No	221132	2. Page 1 of 1
	3. Generator's Name and Mailing Address	EST GALLUP REFINING	San Income		1 1 1 10		
	GALLUP, NM 67301 4. Generator's Prone (726 9721		barrie the				p. March
	5. Transporter 1 Company Name Advanced Chemical Transport Inc.	6.	US EPA ID Number CAR000070540		A. State Transp		191, 201, 20
	7. Transporter 2 Company Name	8.	US EPA ID Number	-	B. Transporter C. State Transp		×
					D. Transporter	2 Phone	
N	9. Designated Facility Name and Site Address	CIA REGIONAL LANDFIL ROAD	L US EPA ID Number SWM #013230(	SP)	E. State Facility		
1	LOS LUNAS, NM 87031 505-917-6232		0 1111 10 10 20 00		F. Facility's Pho		5
	11. WASTE DESCRIPTION			No.	ontainers Type	13. Total Quantity	14. Unit Wt./Ve
7 10	Non-RCRA/Non-DOT Regulation RAIL PIPE HYDROVAC)	ed Material Solid (PCS	FROM	1	GM	15,98	TON
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1	G. Additional Descriptions for Materials Listed Ab	and the second	8 Document #: 0		1000	des for Wastes Listed Abov	
/	<ol> <li>104423NM WEW</li> </ol>						
			а Ц <b>Л</b>				
	15. Special Handling Instructions and Additional hour emergency contact: CHEMTI					3	y m
2	15. Special Handling Instructions and Additional in hour emergency contact: CHEMTI	REC 800-424-9300	ant are fully and accurately describ	ed and are I	n all respects	3	1 m
	15. Special Handling Instructions and Additional hour emergency contact: CHEMTI 16. GENERATOR'S:CERTIFICATION: I hereby of In proper condition for transport. The material	REC 800-424-9300		ed and are l	n all respects	3	Date
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	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA NMID0003332				Manifest Document No.	221120	2. Page 1 of 1
1	3. Generator's Name and Mailing Address	and the second se		- August	- Ki - 11			
	WESTERN REFINING SOUTHWI	EST GALLUP REFI	INING			and the second	er hande ber	
	2 GIANT CROSSING ROAD GALLUP, NM 87301					and the second	and a start for	13 16
	4. Generator's Phone (726 97)21							
	5. Transporter 1 Company Name		6.	US EPA ID Number	1 - All A	A. State Transpo	orter's ID	1
A	Advanced Chemical Transport Inc	DBA ACTENVIRO	O I	CAR0000705	540	B. Transporter 1		1000
F	7. Transporter 2 Company Name		8.	US EPA ID Number		C. State Transpo	orter's ID	1.1.1.1
	a designation from and second		1			D. Transporter 2	Phone	
	9. Designated Facility Name and Site Address		10	US EPA ID Number		E. State Facility's	s ID	
	VASTE MANAGEMENT VALENC	DA REGIONAL LAN	NDFILL			C IS MO AND		
	LOS LUNAS, NM 87031	itono		SWM #0132:	30(SP)	F. Facility's Phor	ne	
-	505-917-6232					A PROPERTY OF		
	11. WASTE DESCRIPTION					Containers	13.	14
10	Strategie Barriston				No.	Туре	Total Quantity	Ur Wt./
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	d. G. Additional Descriptions for Materials Listed Al 104423NM WEW	heve Project Number 18	84676	Document	# 022) 120	WARD	les lot Wastes Letted Above	
	G. Additional Descriptions for Materials Listed At 104423NM WEW 15. Special Handling Instructions and Additional	Information		Document		WARD		
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	G. Additional Descriptions for Materials Listed At 104423NM WEW 15. Special Handling Instructions and Additional	Information		Document R B	#: 0221120	WARD		
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	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No NMD000333211	o.		Manifest Document Ng.	221121	2. Page 1 of	
	3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWE 22 GIANT CROSSING ROAD GALLUP, NM 87301	ST GALLUP REFINING	G			-		
	4. Generator's Phone 726 9721 5. Transporter 1 Company Name Advanced Chemical Transport Inc.		US EPA ID Number CAR000070540		A. State Transp	orter's ID		-
ť	7. Transporter 2 Company Name	8.	US EPA ID Number	-	B. Transporter 1 C. State Transp		1	
	9. Designated Facility Name and Site Address	A REGIONAL LANDE	US EPA ID Number		D. Transporter 2 E. State Facility			
	1600 NM HWY 6 - 40 LANDFILL R LOS LUNAS, NM 87031 505-917-6232	OAD	SWM #013230(S	P)	F. Facility's Pho	ne		-
	11. WASTE DESCRIPTION			C No.	ontainers Type	13. Total Quantity	14 Ur Wt/	4. Init /Vo
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ERAT	с.					X		3
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	G. Additional Descriptions for Materials Listed Abp 104423NM WEW	Moject Number 1846	79 Document #: D	221121	H. Handling Co	des for Wastes Listed A	Above	1
	15. Special Handling Instructions and Additional In	NB	79 Document #: D	221121	H. Handling Co	des for Wastes Listed /	Above	
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	15. Special Handling Instructions and Additional In	Normation REC 800-424-9300	160 99 -			des for Wastes Listed /		
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	NON-HAZARDOUS WASTE MANIFEST	N. Generator's US EPA	ID NO.		Manifest Document No.	9221123	2. Page 1
1	3. Generator's Name and Mailing Address	ST GALLUP REFI	NING		-		of
	92 GIANT CROSSING ROAD GALLUP, NM 87301						
	505 726 9721				-		1
	4. Generator's Phone ( )		the second second second second				
	Ad transporter Company Name in sport Inc.	<b>DBA ACTENVIRO</b>	6. US EPA ID Number 0540		A Otata Tuanan	and a share a	New File
-					A. State Transp		1.1.1
	7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter		1
					C. State Transp		
	9. Designated Facility Name and Site Address	A REGIONAL LAN	10. US EPA ID Number		D. Transporter		
		OAD	SWM #013230(	SP)	E. State Facility	'S ID	
	LOS LUNAS, NM 87031 505-917-6232				F. Facility's Pho		2010
	303-917-0232		1 - 1 - 1 - 1		F. Facility's Pho	ne	4
	11. WASTE DESCRIPTION				ontainers		
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	G. Additional Descriptions for Materials Listed Abov	roject Number 18	4681 Document #: D	221123		les for Wastes Listed Ab	2
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	16. GENERATOR'S CERTIFICATION: I hereby cer in proper condition for transport. The materials of	tify that the contents of this lescribed on this manifest an	shipment are fully and accurately describe e not subject to federal hazardous waste r	d and are in egulations.	all respects		Data
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	NON-HAZARDOUS WASTE MANIFEST 1. Generator's US EPA ID No. NMD000333211			Manifest Document No:	0221122		Page 1
L	3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING				1.		
	WESTERN REFINING SOUTHWEST GALLUP REFINING						
	92 GIANT CROSSING ROAD GALLUP, NM 87301		- F	1.1	1.1	-	
	4. Generator's Phone 726 9721						
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	5. Transporter 1 Company Name 6. Advanced Chemical Transport Inc./DBA ACTENVIRO	US EPA ID Number CAR000070540		A. State Trans			
1				B. Transporter	1 Phone		2.2
	7. Transporter 2 Company Name 8.	US EPA ID Number		C. State Trans	porter's ID	_	_
1	11/			D. Transporter	2 Phone		-
	9 Designated Facility Name and Site Address CIA REGIONAL LANDFILL	US EPA ID Number		E. State Facilit	y's ID		
	1600 NM HWY 6- 40 LANDFILL ROAD						
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	11. WASTE DESCRIPTION	V	Con	tainers	13.		14
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	G. Additional Descriptions for Materials Listed Above ject Number 184680			UN	odes for Wastes Listed Ab		1 1
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	N-Generator's US 5PA ID No.		1. 10	Manifest Document ND	221124	2. Page 1 of
WASTE MANIFEST	EST GALLUP REFINING		meret (V)			
5. Transporter 1 Company Name asport Inc	./DBA ACTENVIRO	US ERA ID Numbro 540	192	A. State Transpo		
7. Transmitter & Common Wome				B. Transporter 1	and the second se	
7. Transporter 2 Company Name	8. I	US EPA ID Number		C. State Transpo D. Transporter 2		
9. Designated Fablity Name and Site Address		US EPA ID Number		E. State Facility		
600 NM HWY 6 - 40 LANDFILL I	ROAD		1722	E. Otato r acinty	310	
OS LUNAS, NM 87031 505-917-6232	2540	SWM #013230(S	51°)	F. Facility's Pho	ne	-
11. WASTE DESCRIPTION				ntainers	13. Total	14 Un
Ion-RCRA/Non-DOT Regulat	ed Material Solid (PCS	FROM	No.	Туре	Quantity	Wt./V
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16. GENERATOR'S CERTIFICATION: 1 hereby	REC 800-424-9300	ent are fully and accurately describe	d and are in	all respects.		
16. GENERATOR'S CERTIFICATION: I hereby in proper condition for transport. The materia	REC 800-424-9300	subject to federal hazardous waste	and are in régulations.	all respects	Г	Date Month Day
16. GENERATOR'S CERTIFICATION: 1 hereby	REC 800-424-9300	ent are fully and accurately describe subject to federal hazardous wasten Signature	ad and are in regulations.	all respects	Г	
16. GENERATOR'S CERTIFICATION: I hereby in proper condition for transport. The materia	REC 800-424-9300 y certify that the contents of this shipm als described on this manifest are not	subject to federal hazardous waste	and are in regulations.	all respects		
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NON-HAZARDOUS WAS"E

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NON-HAZARE WASTE MANI	OUS	Ite (12 pitch) typewriter) 1. Generator's US EPA NMD0003332		111	i in in		Manifest Document N	D221131	2.	Page 1
3. Generator's Name and Mailing 92 GIANT CROSSING GALLUP, NM 87301	Address SOUTHW ROAD	EST GALLUP REFI	NING	S. A.S.	an a			N.		
4. Generator's Phone 726 97	21	Sea Strategic April		14-	an and					212 20
5. Transporter 1 Company Name Advanced Chemical Tra	insport Ind	DBA ACTENVIRO	6.	US EPA ID NO			A. State Tran B. Transporte			
7. Transporter 2 Company Name			8.	US EPA ID N			C. State Tran D. Transporte	er 2 Phone		
9. Designated Facility Name and	Site Address	CIA REGIONAL LAN	19FILL	US EPA ID N	Contraction of the second	the state in the second	E. State Facil	lity's ID		
LOS LUNAS, NM 8703 505-917-623	1	NOAD	m.E.	SWM #	013230(S	P)	F. Facility's P	hone		
11. WASTE DESCRIPTION	- (71)			and the second		Co No.	ntainers Type	13. Total Quantity		14. Unit Wt./Vol.
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d.							JAN	1 6 2019	U	
G. Additional Descriptions for Ma	terials Listed A	bovehiect Number 11	34687	Docu	ment #: D2	2-131	H. Handling C	Codes for Wastes Listed	Above	
) 104423NM WEW			1				VR	2095	+	11
15. Special Handling Instructions	and Additional	Information				-	V .5	10-12	-	-
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Printed/Typed Name				Signature	5		10	1	Month	Day Year
18. Transporter 2 Acknowledger Printed/Typed Name	tent of Receipt	of Materials		Signature			101	A. P. C.	Month	Date Day Yea
19. Discrepancy Indication Space		143.287	600	= (07°	02.5	-14	Elco.	. 5485	1999 1997 1997 1997	5
20. Facility Owner or Operator: C		and the second states of the second states and the second states and	A CONTRACTOR OF A DESCRIPTION OF A DESCRIPANTE A DESCRIPANTE A DESCRIPANTE A DESCRIPTION OF A DESCRIPTION OF	the state of the s	of the share and the second	em 19.		Ĩ		Date
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NON-HAZARDOUS WASS

	lite (12 pitch) typewriter)		ANIF	-01	0.0	
NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.		1	Manifest Document No	D221117	2. Page 1 of
3. Generator's Name and Mailing Address 2. GANT CROSSING ROAD 3. Generator's Phone (* 26. 97)21		a sanda sa			alan da Kanade	
5, Transporter 1 Company Name	o/DBA ACTENVIRO	US EPA ID Number		A. State Tran	sporter's ID	
7. Transporter 2 Company Name	8.	US EPA ID Number	59285	B. Transporte C. State Tran	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Cold only
7. Hansporter z company Name	0,	US EPA ID Number		D. Transporte	1	
And a state of the second	CIA REGIONAL LANDFILL ROAD	US EPA ID Number SWM #013230(	SP)	E. State Facil		
505-917-6232	1			F. Facility's P	none	\$
11. WASTE DESCRIPTION	in the second		and the second s	ntainers	13. Total	14. Unit
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b.					- 19. A	1
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15. Special Handling Instructions and Additional		VBIZ	20	7	Soilf	arm
in proper condition for transport. The materia	als described on this manifest are not su	bject to federal hazardous waste	regulations.		- F	Date
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17. Transporter 1 Acknowledgement of Receipt Printed/Typed Name Chris 18. Transporter 2 Acknowledgement of Receipt Printed/Typed Name 19. Discrepancy Indication Space PCS 2 - N:34 <sup>o</sup>	43.287 W:1	Signature		Joy : 54	85	Ionth Day Y 28 Date

NON-HAZARDOUS WASTE

	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NMD000333211			Manifest Document N	D221130	2. Page 1 of
	3. Generator's Name and Mailing Address					SARI LOV	
-/	WESTERN REFINING SOUTHWE 92 GIANT CROSSING ROAD	ST GALLUP REFINING			1.3.4.14		
	GALLUR, NM-87301				1	1	1. C.
	4. Generator's Phone (726 97)21	and the second	Margare and		1.		
	5. Transporter 1 Company Name Advanced Chemical Transport Inc.	DBA ACTENVIRO	US EPA ID Number		A. State Tran	all second a con-	
	7. Transporter 2 Company Name	8.	CAR000070540	-	B. Transporte		
	7. Transporter 2 Company Name	8.	US EPA ID Number		C. State Tran D. Transport		
	9. Designated Facility Name and Site Address		US EPA ID Number		E. State Faci	the operation of the second	
-	1600 NM HWY 6-40 LANDFILL R	IA REGIONAL LANDFILI		Concession in the	0		sale and set the
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	11. WASTE DESCRIPTION	and the second sec	the states	No.	ontainers Type	13. Total Quantity	14 Ur Wt./
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	a. G. Additional Descriptions for Materials Listed Abo	Project Number 18468	5 Document#D			JAN 1 6 2019 Codes for Wastes Listed	P
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- 11	92 GIANT CROSSING ROAD GALLUP, NM 87301						
	4. Generator's Phone 726 9721						
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-		_	ermeddoddodd		B. Transporte	r 1 Phone	
	7. Transporter 2 Company Name	8.	US EPA ID Number		C. State Trans	sporter's ID	
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	G. Additional Descriptions for Materials Listed Atoroject Number	184676	Document #: 1	7221111		odes for Wastes Listed Al	
	15. Special Handling Instructions and Additional Information	0		1			
4 h	15. Special Handling Instructions and Additional Information our emergency contact: CHEMTREC 800-424-9300	0	1/0				
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	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NMD000333211			Manifest Document Ng	221129	2. Page 1 of 1
9	3 Generator's Name and Mailing Address WESTERN REFINING SOUTHWE 92 GIANT CROSSING ROAD GALLUP, NM 87301 4. Generator's \$655 726 9721	EST GALLUP REFINING					-
	5. Transporter 1 Company Name Advanced Chemical Transport Inc	/DBA ACTENVIRO	US EPA ID Number CAR000070540		A. State Transp B. Transporter		
ŀ	7. Transporter 2 Company Name	8.	US EPA ID Number		C. State Transp	and the second se	
			states of the office state		D. Transporter	2 Phone	
	WASTE MANAGEMENT VALENC 1600 NM HWY 6 - 40 LANDFILL F LOS LUNAS, NM 87031	IA REGIONAL LAN <sup>10</sup> FILL ROAD	US EPA ID Number SWM #013230(SF	?)	E. State Facility F. Facility's Pho	<u> </u>	
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5	G. Additional Descriptions for Materials Listed Al     104423NM WEW	Project Number 184685 -	Document #: D2	21129	D	tees for Wastes Liates Ab	
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24	15. Special Handling Instructions and Additional hour emergency contact: CHEMTI	Information	B120.50			JAN 152	.019
24	hour emergency contact: CHEMT	Information REC 800-424-9300			#		.019
24	THE REPORT OF A DESCRIPTION OF A DESCRIP	Information REC 800-424-9300	are fully and accurately resortibed	and are in and are in and are in a second seco	n all respects		Date
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	NON-HAZARDOUS	1. Generator's US EPA ID No.			Manifest Document No		2. Page 1
	WASTE MANIFEST	NMD000333211				D221125	of 1
	3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWI 92 GIANT CROSSING ROAD GALLUP NM 87301 4. Generator's 205 726 9721	EST GALLUP REFINING					
	4. Generator's 505 726 9721 5. Transporter 1 Company Name						
		6.	US EPA ID Number	35	A. State Trans B. Transporte	the state of the s	
	Advanced Chemical Transport Inc 7. Transporter 2 Company Name	8.	CAR0000705 US EPA ID Number	40	C. State Trans		
					D. Transporte		
	9. Designated Facility Name and Site Address WASTE MANAGEMENT VALENC 1600 NM HWY 6 - 40 LANDFILL F			1.17	E. State Facili		
	LOS LUNAS, NM 87031	1	SWM #01323	30(SP)	F. Facility's Pi	none	4
	11. WASTE DESCRIPTION 232			Co No.	ntainers Type	13. Total Quantity	14. Uni Wt.V
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	G. Additional Descriptions for Materials Listed Ab ) 104423NM WEW- 1メ でう	Project Number 184683	3 Document	#. D221125		odes for Wastes Listed Abo	ve
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4	) 104423NM WEW-1X 75 15. Special Handling Instructions and Additional I hour emergency contact: CHEMTE 16. GENERATOR'S CERTIFICATION: I hereby of In proper condition for transport. The materials Printed/Typed Name 17. Transporter 1 Acknowledgement of Receipt of	Project Number 184683	ont are fully and accurately de- subject to federal hazardous w	scribed and are in vaste regulations.	H. Handling C	odes for Wastes Listed Abo 2863 8893	Date Dath Day Date
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NON-HAZARDOUS	1. Generator's US EPA ID No.			Manifest Document No.		2. Page 1			
WASTE MANIFEST	NMD000333211			Document No. D22	1119	of 1			
3. Generator's Name and Mailing Address VESTERN REFINING SOUTHW 2 GIANT CROSSING ROAD SALLUP, NM 87301 4. Generator's Broge 1726 9721									
5. Transporter 1 Company Name	6.	US EPA ID Number		A. State Transporte					
dvanced Chemical Transport Inc	./DBA ACTENVIRO	CAR00007054	0	B. Transporter 1 Ph					
7. Transporter 2 Company Name	8.	US EPA ID Number		C. State Transporter's ID					
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9. Designated Facility Name and Site Address VASTE MANAGEMENT VALENO 600 NM HWY 6 - 40 LANDFILL		US EPA ID Number L SWM #013230	D(SP)	E. State Facility's ID	)				
OS LUNAS, NM 87031	1		1			4			
505-917-6232 11. WASTE DESCRIPTION				ntainers	13.	14			
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G. Additional Descriptions for Materials Listed A ) 104423NM WEW	<sup>bove</sup> Project Number 184677 —	Document #	: D221119	H. Handling Codes	for Wastes Listed At	9400			
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NON-HAZARDOUS WASTE

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NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NMD000333211			Manifest Document N	D221116	2. Page 1 of
WESTERN REFINING SOUTHW 92 GIANT CROSSING ROAD GALLUP, NM 87301 4. Generator's 50,5,726 97,21	EST GALLUP REFINING				an a	annon ann an a
5. Transporter 1 Company Namo Advanced Chemical Transport In	OPA ACTENNIDO	US EPA ID Number		A. State Tran	sporter's ID	
	CIDBA ACTENVIRO	CAR00007054	10	B. Transporte	r 1 Phone	
7. Transporter 2 Company Name	В.	US EPA ID Number		C. State Tran	sporter's ID	
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WASTEWAR形达色的名NFIVAtera 1600 NM HWY 6 - 40 LANDFILL LOS LUNAS, NM 87031	CIA REGIONAL LANÖFIL ROAD	L US EPA ID Number SWM #013230	0(SP)	E. State Facil F. Facility's P		
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104423NM WEW- <u>VB</u> Combrol # 2 15. Special Handling Instructions and Additional hour emergency contact: CHEMT	893 Information REC 800-424-9300			da	OAN 1.0 208	
Control # 2 15. Special Handling Instructions and Additional	893 Information REC 800-424-9300			da	OAN 1.0 208	
104423NM WEWS	DO 4 8 93 Unformation REC 800-424-9300 recrilly that the contents of this shipme als described on this manifest are not a			da	md four	Date Mech Date
104423NM WEWS Control # 2 15. Special Handling Instructions and Additional NOUR emergency contact: CHEMIT 16. GENERATOR'S CERTIFICATION: I hareby In proper condition for transport. The matoric Printed/Typed Name 17. Transporter 1 Acknowledgement of Receipt Printed/Typed Name David Wite	100 4 8 93 Unformation REC 800-424-9300 rearily that the contents of this shipme als described on this manifest are not a OTSC4 of Materials	Int are fully and accurately desc ubject to federal hazardous wa		da	md Burn	Date Anth Day Ye Date Anth Day Ye Date Anth Day Ye
104423NM WEWS	100 4 8 93 Unformation REC 800-424-9300 rearily that the contents of this shipme als described on this manifest are not a OTSC4 of Materials	Int are fully and accurately descublect to federal hazardous wa		da	md four	Date Aconth Day YA Date Aconth Day YA Date Aconth Day YA Date
104423NM WEWS ComC 15. Special Handling Instructions and Additional hour emergency contact: CHEMT 16. GENERATOR'S CERTIFICATION: I hareby In proper condition for transport. The matoric Printed/Typed Name 17. Transporter 1 Acknowledgement of Receipt Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt Printed/Typed Name 19. Discrepancy Indication Space PCS 2 - N:34	100 4 8 93 Unformation REC 800-424-9300 rearily that the contents of this shipmen als described on this manifest are not s OTSC4 tol Materials TC4 143.287 W;	Signature	ribed and pro la ste regulations.	Aa Aall respects	md four	Date Month Day Ye Aonth Day Ye Date Month Day Ye Date
104423NM WEWS	1004 893 Unformation REC 800-424-9300 rearlify that the contents of this shipment als described on this manifest are not a 01564 of Materials 1643.287 W; secolpt of the waste materials covered b	Signature	ribed and pro la ste regulations.	Aa Aall respects	molforn Molfor	Date Aconth Day YA Date Aconth Day YA Date Aconth Day YA Date

NON-HAZARDOUS WAR

# 0432

# NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID N NMD000333211			Manifest Document N	D220968	Page 1 ol		
WESTERN REFINING SOUTHWI 92 GIANT CROSSING ROAD GALLUP, NM 87301 4. Generators 和品。726 9721	EST GALLUP REFINING	9						
5. Transporter 1 Company Name Advanced Chemical Transport Inc	/DBA ACTENVIRO	US EPA ID Number CAR0000705	40	A. State Tran				
7. Transporter 2 Company Name	<b>8</b> . 1	US EPA ID Number		B. Transporter 1 Phone C. State Transporter's ID D. Transporter 2 Phone				
WASTENNARASEMENT WATERC 600 NM HWY 6 - 40 LANDFILL I LOS LUNAS, NM 87031	CIA REGIONAL LANÖFI ROAD	LL US EPA ID Number SWIM #01323	0(SP)	E. State Facil	ity's ID			
505-917-6232	<u> </u>	0.000.000.000.000.000.000.000.000.000.				1		
		an a	No.	Type	13. Totai Guantity	Unit Wt./Vol		
Non-RCRA/Non-DO1 Regulate RAIL PIPE HYDROVAC)	ed Material Solid (PC)	SFROM	1	M	9880 165	TON		
b.					1999			
C.								
d.					CEIVE			
G. Additional Descriptions for Materials Listed At					Codes for Wastes Listed Above			
104423NM WEW Cemtrol # 88	- 39 <i>3</i>	B 12131	. DLLUUUU	N	JAN 1 5 2019			
15. Special Handling Instructions and Additional nour emergency contact: CHEMTE	Information			Ĺ	# 8293 and farme	9		
	dusta	T CH CT C	7 15 1		Souttaum			
16. GENERATOR'S CERTIFICATION: 1 hareby in proper condition for transport. The materia	certify that the contents of this ship is described on this manifest are no	nent are fully and accurately des t subject to federal hazardous w	scribed and are in asle regulations.	all respects				
	Dorsey		un	De	Month	Date Day V 2011		
17. Transporter 1 Acknowledgement of Receipt Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt	Kibera	signature	uid	Kiu	Bien 1	Date Day V 2011 Date		
Printed/Typed Name		Signature			Month	Day Y		
19. Discrepancy Indication Space PCS -2 - N 1.34 <sup>*</sup> 20. Facility Owner or Operator: Certification of re		$\frac{1107^{\circ}}{100}$	514 ed in item 19.	Elev:	548S			
	and the state of an and the second	· · · · · · · · · · · · · · · · · · ·						
Printed/Typed Name		Sigoature			Month	Date Day Ye		

NON-HAZARDOUS WAS

Appendix E Waste Analytical Results



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

September 12, 2018

Janelle Vestal Western Refining Southwest, Gallup Rt. 3 Box 7 Gallup, NM 87301 TEL: FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1808D23

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/22/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 04, 2018.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report
Lab Order 1808D23

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/12/2018

CLIENT: Western Refining Southwest, Gallup				Client Sample ID: Rail Pipe Excavated Soils						
<b>Project:</b> Rail Pipe Soil Cleanup	Collection Date: 8/20/2018 10:30:00 AM									
Lab ID: 1808D23-001	Matrix:	SLUDGE								
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS	;					Analyst: Irm			
Diesel Range Organics (DRO)	25000	94	500		mg/Kg	50	8/27/2018 1:55:07 PM	39939		
Motor Oil Range Organics (MRO)	4500	2500	2500		mg/Kg	50	8/27/2018 1:55:07 PM	39939		
Surr: DNOP	0	0	50.6-138	S	%Rec	50	8/27/2018 1:55:07 PM	39939		
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSE	5		
Gasoline Range Organics (GRO)	1800	70	240		mg/Kg	50	8/23/2018 10:19:31 AN	/ 39931		
Surr: BFB	156	0	15-316		%Rec	50	8/23/2018 10:19:31 AN	/ 39931		
EPA METHOD 7471: MERCURY							Analyst: rde			
Mercury	0.089	0.0064	0.032		mg/Kg	1	8/27/2018 4:04:33 PM	40008		
MERCURY, TCLP							Analyst: rde			
Mercury	ND	0.00050	0.020		mg/L	1	9/11/2018 4:43:30 PM	40278		
EPA METHOD 6010B: SOIL METALS							Analyst: JLF			
Arsenic	0.88	0.87	2.4	J	mg/Kg	1	8/28/2018 1:29:19 PM	39998		
Barium	300	0.042	0.19		mg/Kg	2	8/28/2018 12:59:21 PN	/ 39998		
Cadmium	ND	0.030	0.097		mg/Kg	1	8/28/2018 12:34:58 PM	/ 39998		
Chromium	15	0.040	0.29		mg/Kg	1	8/28/2018 12:34:58 PM	/ 39998		
Lead	26	0.24	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	/ 39998		
Selenium	ND	0.98	2.4		mg/Kg	1	8/28/2018 12:34:58 PN			
Silver	ND	0.032	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	/ 39998		
EPA METHOD 6010B: TCLP METALS							Analyst: ELS			
Barium	2.5	0.0011	100	J	mg/L	1	9/12/2018 6:35:23 AM	40277		
Chromium	ND	0.00070	5.0		mg/L	1	9/12/2018 6:35:23 AM	40277		
Lead	0.014	0.011	5.0	J	mg/L	1	9/12/2018 6:35:23 AM	40277		
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAN	Λ		
Acenaphthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Acenaphthylene	ND	9.9	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Aniline	ND	9.5	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Anthracene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Azobenzene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benz(a)anthracene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzo(a)pyrene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzo(b)fluoranthene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzo(g,h,i)perylene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzo(k)fluoranthene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzoic acid	ND	14	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Benzyl alcohol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Bis(2-chloroethoxy)methane	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 18
- P Sample pH Not In RangeRL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report

### Hall Environmental Analysis Laboratory, Inc.

Lab Order **1808D23** Date Reported: **9/12/2018** 

CLIENT: Western Refining Southwest, Gallup Project: Rail Pipe Soil Cleanup				Client Sample ID: Rail Pipe Excavated Soils Collection Date: 8/20/2018 10:30:00 AM						
Lab ID: 1808D23-001	Matrix: SI	Matrix: SLUDGE         Received Date: 8/22/2018 9:05:00 AM								
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAI	N		
Bis(2-chloroethyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Bis(2-chloroisopropyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Bis(2-ethylhexyl)phthalate	ND	27	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Bromophenyl phenyl ether	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Butyl benzyl phthalate	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Carbazole	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Chloro-3-methylphenol	ND	13	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Chloroaniline	ND	11	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Chloronaphthalene	ND	11	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Chlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Chlorophenyl phenyl ether	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Chrysene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM			
Di-n-butyl phthalate	ND	27	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Di-n-octyl phthalate	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Dibenz(a,h)anthracene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Dibenzofuran	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM			
1,2-Dichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
1,3-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
1,4-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
3,3´-Dichlorobenzidine	ND	9.7	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Diethyl phthalate	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Dimethyl phthalate	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4-Dichlorophenol	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4-Dimethylphenol	ND	9.2	29	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4,6-Dinitro-2-methylphenol	ND	9.0	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4-Dinitrophenol	ND	6.3	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4-Dinitrotoluene	ND	10	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,6-Dinitrotoluene	ND	12	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Fluoranthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Fluorene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Hexachlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Hexachlorobutadiene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Hexachlorocyclopentadiene	ND	9.7	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Hexachloroethane	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Indeno(1,2,3-cd)pyrene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM			
Isophorone	ND	13	39	D	mg/Kg	10	8/30/2018 2:53:08 PM			
1-Methylnaphthalene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Methylnaphthalene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Methylphenol	ND	14	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		

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

Qualifiers: \*

Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 18
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1808D23

Date Reported: 9/12/2018

### Hall Environmental Analysis Laboratory, Inc.

**Client Sample ID:** Rail Pine Excavated Soils

CLIENT: Western Refining Southwest, Ga Project: Rail Pipe Soil Cleanup		Client Sample ID: Rail Pipe Excavated Soils Collection Date: 8/20/2018 10:30:00 AM								
Lab ID: 1808D23-001	Matrix: S	LUDGE	Rec	eived I	<b>Date:</b> 8/2	2/201	8 9:05:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	Batch ID		
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM			
3+4-Methylphenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
N-Nitrosodi-n-propylamine	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
N-Nitrosodiphenylamine	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Naphthalene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Nitroaniline	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
3-Nitroaniline	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Nitroaniline	ND	9.4	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Nitrobenzene	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2-Nitrophenol	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
4-Nitrophenol	ND	15	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Pentachlorophenol	ND	9.9	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Phenanthrene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Phenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Pyrene	14	11	20	JD	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Pyridine	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
1,2,4-Trichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4,5-Trichlorophenol	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
2,4,6-Trichlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991		
Surr: 2-Fluorophenol	0	:	21.7-87.9	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
Surr: Phenol-d5	0	;	30.2-92.2	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
Surr: 2,4,6-Tribromophenol	0		47.1-103	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
Surr: Nitrobenzene-d5	0		23.9-102	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
Surr: 2-Fluorobiphenyl	0		32.6-101	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
Surr: 4-Terphenyl-d14	0		37.2-117	SD	%Rec	10	8/30/2018 2:53:08 PM	39991		
EPA METHOD 8260B: VOLATILES							Analyst: DJF			
Benzene	11	0.095	0.48		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Toluene	72	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Ethylbenzene	19	0.068	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Methyl tert-butyl ether (MTBE)	ND	0.15	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
1,2,4-Trimethylbenzene	23	0.084	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
1,3,5-Trimethylbenzene	7.9	0.061	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
1,2-Dichloroethane (EDC)	ND	0.10	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
1,2-Dibromoethane (EDB)	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Naphthalene	0.94	0.098	1.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931		
1-Methylnaphthalene	0.87	0.068	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931		
2-Methylnaphthalene	1.1	0.078	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Acetone	ND	1.0	14		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Bromobenzene	ND	0.071	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		
Bromodichloromethane	ND	0.13	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931		

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

Qualifiers: \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 18
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 9/12/2018

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808D23

CLIENT: Western Refining Southwest, Ga Project: Rail Pipe Soil Cleanup		Client Sample ID: Rail Pipe Excavated Soils Collection Date: 8/20/2018 10:30:00 AM							
Lab ID: 1808D23-001	Matrix: S	LUDGE	Rec	eived <b>E</b>	<b>Date:</b> 8/2	2/201	8 9:05:00 AM		
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
EPA METHOD 8260B: VOLATILES							Analyst: DJI	=	
Bromoform	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Bromomethane	ND	0.17	2.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
2-Butanone	ND	0.57	9.6		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Carbon disulfide	ND	0.11	9.6		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Carbon tetrachloride	ND	0.095	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Chlorobenzene	ND	0.057	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Chloroethane	ND	0.32	1.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Chloroform	ND	0.058	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Chloromethane	ND	0.20	2.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
2-Chlorotoluene	ND	0.075	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
4-Chlorotoluene	ND	0.087	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
cis-1,2-DCE	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
cis-1,3-Dichloropropene	ND	0.073	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,2-Dibromo-3-chloropropane	ND	0.13	1.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Dibromochloromethane	ND	0.081	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Dibromomethane	ND	0.047	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,2-Dichlorobenzene	ND	0.049	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,3-Dichlorobenzene	ND	0.085	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,4-Dichlorobenzene	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Dichlorodifluoromethane	ND	0.40	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,1-Dichloroethane	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,1-Dichloroethene	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,2-Dichloropropane	ND	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,3-Dichloropropane	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
2,2-Dichloropropane	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,1-Dichloropropene	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Hexachlorobutadiene	ND	0.24	1.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
2-Hexanone	ND	0.19	9.6		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Isopropylbenzene	4.3	0.065	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
4-Isopropyltoluene	1.3	0.074	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
4-Methyl-2-pentanone	ND	0.21	9.6		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Methylene chloride	ND	0.39	2.9		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
n-Butylbenzene	1.5	0.086	2.9	J	mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
n-Propylbenzene	6.1	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
sec-Butylbenzene	1.6	0.099	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
Styrene	ND	0.17	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
tert-Butylbenzene	ND	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,1,1,2-Tetrachloroethane	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	
1,1,2,2-Tetrachloroethane	ND	0.28	0.96		mg/Kg	20	8/23/2018 11:56:07 A	M 39931	

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

Qualifiers: \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 18
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808D23 Date Reported: 9/12/2018

**CLIENT:** Western Refining Southwest, Gallup Client Sample ID: Rail Pipe Excavated Soils **Project:** Rail Pipe Soil Cleanup Collection Date: 8/20/2018 10:30:00 AM Lab ID: 1808D23-001 Matrix: SLUDGE Received Date: 8/22/2018 9:05:00 AM Result PQL Analyses **MDL Oual Units** DF **Date Analyzed Batch ID EPA METHOD 8260B: VOLATILES** Analyst: DJF 8/23/2018 11:56:07 AM 39931 Tetrachloroethene (PCE) ND 0.077 0.96 mg/Kg 20 trans-1,2-DCE ND 0.39 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 ND 0.96 trans-1,3-Dichloropropene 0.11 mg/Kg 20 8/23/2018 11:56:07 AM 39931 ND 0.088 1,2,3-Trichlorobenzene 1.9 mg/Kg 20 8/23/2018 11:56:07 AM 39931 ND 1,2,4-Trichlorobenzene 0.098 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 1,1,1-Trichloroethane ND 0.13 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 1,1,2-Trichloroethane ND 0.10 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 Trichloroethene (TCE) ND 0.12 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 Trichlorofluoromethane ND 0.14 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 1,2,3-Trichloropropane ND 0.48 1.9 mg/Kg 20 8/23/2018 11:56:07 AM 39931 Vinyl chloride ND 0.080 0.96 mg/Kg 20 8/23/2018 11:56:07 AM 39931 Xylenes, Total 99 0.30 1.9 mg/Kg 20 8/23/2018 11:56:07 AM 39931 Surr: Dibromofluoromethane 104 70-130 %Rec 20 8/23/2018 11:56:07 AM 39931 Surr: 1,2-Dichloroethane-d4 20 112 70-130 %Rec 8/23/2018 11:56:07 AM 39931 Surr: Toluene-d8 70-130 %Rec 20 8/23/2018 11:56:07 AM 103 39931 Surr: 4-Bromofluorobenzene 110 70-130 %Rec 20 8/23/2018 11:56:07 AM 39931 **VOLATILES BY 8260B/1311** Analyst: RAA 0.45 0.10 0.50 mg/L 8/28/2018 1:16:00 PM 39997 Benzene J 1 Surr: 1,2-Dichloroethane-d4 107 0 70-130 %Rec 1 8/28/2018 1:16:00 PM 39997 %Rec Surr: 4-Bromofluorobenzene 101 0 57.3-148 1 8/28/2018 1:16:00 PM 39997 Surr: Dibromofluoromethane 106 0 70-130 %Rec 39997 1 8/28/2018 1:16:00 PM Surr: Toluene-d8 97.0 0 70-130 %Rec 1 8/28/2018 1:16:00 PM 39997

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the asso
	D	Sample Diluted Due to Matrix	Е	Value above quantitation ra
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below qua

- Not Detected at the Reporting Limit ND
- Practical Quanitative Limit POL
- S % Recovery outside of range due to dilution or matrix
- sociated Method Blank
- range
- antitation limits Page 5 of 18
- Р Sample pH Not In Range RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

WO#:	1808D23
	12-Sep-18

	-	Refining Southwest, Gallup Soil Cleanup									
Sample ID LCS-39939	SampT	ype: LC	S	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch	ID: <b>39</b>	939	R	RunNo: 53657						
Prep Date: 8/22/2018	Analysis D	ate: <b>8/</b>	23/2018	/2018 SeqNo: 1770197				g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	45	10	50.00	0	91.0	70	130				
Surr: DNOP	4.9		5.000		98.5	50.6	138				
Sample ID MB-39939	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics		
Client ID: PBS	Batch	ID: 39	939	R	anNo: 5	3657					
Prep Date: 8/22/2018	Analysis D	ate: <b>8/</b>	23/2018	S	SeqNo: 1	770198	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	9.8		10.00		97.5	50.6	138				

#### **Qualifiers:**

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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	10001
	12-Sep

	n Refining S be Soil Clear		st, Gallup							
Sample ID MB-39931	SampT	ype: ME	BLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch	n ID: <b>39</b>	<b>39931</b> RunNo: <b>53673</b>							
Prep Date: 8/22/2018	Analysis D	Date: <b>8/</b>	23/2018	S	SeqNo: 1	769982	Units: <b>mg/k</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		87.8	15	316			
Sample ID LCS-39931	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	e	
Client ID: LCSS	Batch	n ID: <b>39</b>	931	F	RunNo: 5	3673				
Prep Date: 8/22/2018	Analysis D	0ate: <b>8/</b>	23/2018	S	SeqNo: 1	769983	Units: <b>mg/k</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.4	75.9	131			
Surr: BFB	1000		1000		101	15	316			

#### **Qualifiers:**

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- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
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- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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WO#:	1808D23
	12-Sep-18

	rn Refining S ipe Soil Clear		st, Gallup							
Sample ID mb-39931	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: Volat	tiles		
Client ID: PBS	Batch	n ID: <b>39</b>	931	F	RunNo: 5	3662				
Prep Date: 8/22/2018	Analysis D				SeqNo: 1		Units: <b>mg/k</b>	(q		
	Result	PQL		SPK Ref Val	%REC	LowLimit	_	%RPD	RPDLimit	Qual
Analyte Benzene	ND	0.025	SFR Value	SFR REI VAI	%REC	LOWLIIIII	HighLimit	%RFD	REDLIIIII	Quai
Toluene	ND	0.020								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.35	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane		0.050								
2,2-Dichloropropane	ND	0.10								

#### **Qualifiers:**

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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 8 of 18

WO#:	1808D23
	12-Sep-18

	n Refining S pe Soil Clear		st, Gallup							
Sample ID mb-39931	SampT	Type: ME	BLK	Tes	tCode: El					
Client ID: PBS	Batcl	Batch ID: 39931			RunNo: 5	3662				
Prep Date: 8/22/2018	Analysis D	Analysis Date: 8/23/2018			SeqNo: 1	770133	Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10			a					
Surr: Dibromofluoromethane	0.48		0.5000		95.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.0	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Sample ID Ics-39931	SampT	Type: LC	S	Tes	tCode: E	PA Method	8260B: Volat	iles		
Client ID: LCSS	Batcl	h ID: <b>39</b>	931	F	RunNo: <b>5</b> :	3662				
Prep Date: 8/22/2018	Analysis E	Date: 8/	23/2018	5	SeqNo: 1770134 Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.8	70	130			
Toluene	1.1	0.050	1.000	0	107	70	130			
Chlorobenzene	1.1	0.050	1.000	0	105	70	130			

#### **Qualifiers:**

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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#### WO#: 1808D23

#### 12-Sep-18

#### **Client:** Western Refining Southwest, Gallup **Project:**

Rail Pipe Soil Cleanup

Sample ID Ics-39931 Client ID: LCSS Prep Date: 8/22/2018	SampType: LCS Batch ID: 39931 Analysis Date: 8/23/2018			R	tCode: <b>El</b> RunNo: <b>5</b> SeqNo: 1	3662	8260B: Volat Units: mg/k			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.92	0.050	1.000	0	92.2	70	130			
Trichloroethene (TCE)	0.97	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 10 of 18

	n Refining So		st, Gallup							
Project: Rail Pi	pe Soil Clear	lup								
ample ID Ics-39997 SampType: LCS				Tes	tCode: V	olatiles by a	8260B/1311			
Client ID: LCSS	Batch	Batch ID: 39997			RunNo: 5	3749				
Prep Date: 8/27/2018	Analysis D	ate: 8/	28/2018	S	SeqNo: 1	773361	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		111	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		102	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		112	70	130			
Surr: Toluene-d8	0.20		0.2000		97.7	70	130			
Sample ID mb-39997	SampT	ype: ME	BLK	Tes	tCode: V	olatiles by a	8260B/1311			
Client ID: PBS	Batch	n ID: 39	997	F	RunNo: 5	3749				
Prep Date: 8/27/2018	Analysis D	ate: <b>8/</b>	28/2018	5	SeqNo: 1773362 Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		109	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		100	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		111	70	130			
Surr: Toluene-d8	0.19		0.2000		96.4	70	130			

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- PQL Practical Quanitative Limit
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WO#: 1808D23

#### WO#: 1808D23

12-Sep-18

#### **Client:** Western Refining Southwest, Gallup

**Project:** 

Rail Pipe Soil Cleanup

Sample ID Ics-39991	SampT	ype: LC	S	Tes	TestCode: EPA Method 8270C: Semivolatiles RunNo: 53825					
Client ID: LCSS	Batcl	h ID: 39	991	R						
Prep Date: 8/27/2018	Analysis D	Date: 8/	30/2018	S	SeqNo: 1	776440	Units: <b>mg/k</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	82.2	42	110			
1-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.1	42.3	117			
2-Chlorophenol	2.1	0.20	3.330	0	62.7	27.6	117			
,4-Dichlorobenzene	0.94	0.20	1.670	0	56.2	28.8	105			
,4-Dinitrotoluene	1.5	0.50	1.670	0	88.1	42	98.7			
I-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.2	41.8	112			
-Nitrophenol	3.4	0.25	3.330	0	102	54	113			
Pentachlorophenol	2.8	0.40	3.330	0	84.5	41.5	101			
Phenol	2.2	0.20	3.330	0	66.8	32.2	115			
yrene	1.6	0.20	1.670	0	93.5	48.5	121			
,2,4-Trichlorobenzene	1.1	0.20	1.670	0	65.6	39.9	112			
Surr: 2-Fluorophenol	1.9		3.330		58.5	21.7	87.9			
Surr: Phenol-d5	2.3		3.330		70.1	30.2	92.2			
Surr: 2,4,6-Tribromophenol	3.1		3.330		93.8	47.1	103			
Surr: Nitrobenzene-d5	1.1		1.670		63.7	23.9	102			
Surr: 2-Fluorobiphenyl	1.3		1.670		76.2	32.6	101			
Surr: 4-Terphenyl-d14	1.8		1.670		108	37.2	117			
Sample ID mb-39991	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8270C: Semi	ivolatiles		
Client ID: PBS		h ID: <b>39</b>		R	RunNo: <b>53825</b>					
Prep Date: 8/27/2018	Analysis D	Date: 8/	30/2018	S	SeqNo: 1776441 Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
cenaphthene	ND	0.20					-			
cenaphthylene	ND	0.20								
niline	ND	0.20								
Inthracene	ND	0.20								
zobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
	ND	0.20								
enzo(b)fluoranthene	ND	0.20								
.,	ND									
enzo(g,h,i)perylene		0.20 0.20 0.20								
enzo(g,h,i)perylene enzo(k)fluoranthene	ND	0.20 0.20								
enzo(g,h,i)perylene enzo(k)fluoranthene enzoic acid	ND ND ND	0.20 0.20 0.50								
enzo(g,h,i)perylene enzo(k)fluoranthene enzoic acid enzyl alcohol	ND ND ND ND	0.20 0.20 0.50 0.20								
Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy)methane	ND ND ND ND	0.20 0.20 0.50 0.20 0.20								
Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether	ND ND ND ND	0.20 0.20 0.50 0.20								

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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WO#:	1808D23
	12-Sep-18

	Refining S e Soil Clear		st, Gallup									
Sample ID mb-39991	SampT	уре: <b>МВ</b>	LK	Tes	tCode: E	PA Method	8270C: Semi	volatiles				
Client ID: PBS	Batch	n ID: 399	991	F								
Prep Date: 8/27/2018	Analysis D	ate: 8/3	30/2018	S	SeqNo: 1	776441	1 Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
4-Bromophenyl phenyl ether	ND	0.20					0					
Butyl benzyl phthalate	ND	0.20										
Carbazole	ND	0.20										
4-Chloro-3-methylphenol	ND	0.50										
4-Chloroaniline	ND	0.50										
2-Chloronaphthalene	ND	0.25										
2-Chlorophenol	ND	0.20										
4-Chlorophenyl phenyl ether	ND	0.20										
Chrysene	ND	0.20										
Di-n-butyl phthalate	ND	0.40										
Di-n-octyl phthalate	ND	0.40										
Dibenz(a,h)anthracene	ND	0.20										
Dibenzofuran	ND	0.20										
1,2-Dichlorobenzene	ND	0.20										
1,3-Dichlorobenzene	ND ND	0.20 0.20										
1,4-Dichlorobenzene 3,3´-Dichlorobenzidine	ND	0.20										
Diethyl phthalate	ND	0.20										
Dimethyl phthalate	ND	0.20										
2,4-Dichlorophenol	ND	0.40										
2,4-Dimethylphenol	ND	0.30										
4,6-Dinitro-2-methylphenol	ND	0.40										
2,4-Dinitrophenol	ND	0.50										
2,4-Dinitrotoluene	ND	0.50										
2,6-Dinitrotoluene	ND	0.50										
Fluoranthene	ND	0.20										
Fluorene	ND	0.20										
Hexachlorobenzene	ND	0.20										
Hexachlorobutadiene	ND	0.20										
Hexachlorocyclopentadiene	ND	0.20										
Hexachloroethane	ND	0.20										
Indeno(1,2,3-cd)pyrene	ND	0.20										
Isophorone	ND	0.40										
1-Methylnaphthalene	ND	0.20										
2-Methylnaphthalene	ND	0.20										
2-Methylphenol	ND	0.40										
3+4-Methylphenol	ND	0.20										
N-Nitrosodi-n-propylamine	ND	0.20										
N-Nitrosodiphenylamine	ND	0.20										

#### **Qualifiers:**

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 13 of 18

# WO#: 1808D23

12-Sep-18
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	estern Refining S il Pipe Soil Clea		est, Gallup							
Sample ID mb-39991	Samp	Туре: МІ	BLK	Tes	tCode: El	PA Method	8270C: Semi	ivolatiles		
Client ID: PBS	Bato	ch ID: 39	991	F	RunNo: 5	3825				
Prep Date: 8/27/2018	Analysis	Date: 8/	/30/2018	S	SeqNo: 1	776441	Units: <b>mg/k</b>	(a		
	,						-	-		<b>A</b> 1
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		55.8	21.7	87.9			
Surr: Phenol-d5	2.0		3.330		60.9	30.2	92.2			
Surr: 2,4,6-Tribromopheno			3.330		89.1	47.1	103			
Surr: Nitrobenzene-d5	1.0		1.670		61.9	23.9	102			
Surr: 2-Fluorobiphenyl	1.1		1.670		66.9	32.6	101			
Surr: 4-Terphenyl-d14	1.6		1.670		98.5	37.2	117			

#### **Qualifiers:**

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- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 14 of 18

0.0076

0.006660

0.033

Client:		Refining Southwe	est, Gallup							
Project:	Rail Pip	e Soil Cleanup								
Sample ID	MB-40008	SampType: <b>M</b>	BLK	Tes	tCode: EF	PA Method	7471: Mercu	ry		
Client ID:	PBS	Batch ID: 40	8000	F	RunNo: 53	3728				
Prep Date:	8/27/2018	Analysis Date: 8	8/27/2018	S	SeqNo: 17	772448	Units: <b>mg/k</b>	ζg		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.033								
Sample ID	LCS-40008	SampType: LCS TestCode: EPA Method 7471: Mercury								
Client ID:	LCSS	Batch ID: 40	8000	F	RunNo: <b>53728</b>					
Prep Date:	8/27/2018	Analysis Date: 8	8/27/2018	5	SeqNo: 17	772449	Units: <b>mg/k</b>	ζg		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17 0.033	0.1667	0	104	80	120			
Sample ID	LLLLCS-40008	SampType: L	CSLL	Tes	tCode: EF	PA Method	7471: Mercu	ry		
Client ID:	BatchQC	Batch ID: 4	8000	F	RunNo: 53	3728				
Prep Date:	8/27/2018	Analysis Date: 8	8/27/2018	S	SeqNo: 17	772450	Units: <b>mg/K</b>	(g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

0

114

70

130

#### **Qualifiers:**

Mercury

- \* Value exceeds Maximum Contaminant Level.
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J

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Client: Project:		ern Refining Southwest, Gallup Pipe Soil Cleanup					
Sample ID	MB-40278	SampType: MBLK	TestCode: MERC	URY, TCLP			
Client ID:	PBW	Batch ID: 40278	RunNo: 54072				
Prep Date:	9/11/2018	Analysis Date: 9/11/2018	SeqNo: 17865	79 Units: mg/L			
Analyte		Result PQL SPK value	SPK Ref Val %REC Lov	wLimit HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.020					
Sample ID	LCS-40278	SampType: LCS	TestCode: MERC	URY, TCLP			
Client ID:	LCSW	Batch ID: 40278	RunNo: 54072				
Prep Date:	9/11/2018	Analysis Date: 9/11/2018	SeqNo: 17865	80 Units: mg/L			
Analyte		Result PQL SPK value	SPK Ref Val %REC Lov	wLimit HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051 0.020 0.005000	0 103	80 120			J

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- PQL Practical Quanitative Limit
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WO#: **1808D23** *12-Sep-18* 

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#:	1808D23
WO#:	1808D23

12-Sep-18

Client: Project:		rn Refining Southwe	st, Gallup								
Sample ID	MB-39998	SampType: MI	BLK	TestCode: EPA Method 6010B: Soil Metals							
Client ID:	PBS	Batch ID: 39	Batch ID: 39998			3746					
Prep Date:	8/27/2018	Analysis Date: 8/	28/2018	S	SeqNo: 1	773309	Units: <b>mg/k</b>	٢g			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium		ND 0.10									
Cadmium		ND 0.10									
Chromium		ND 0.30									
Lead		ND 0.25									
Selenium		ND 2.5									
Silver		ND 0.25									
Sample ID	LCS-39998	SampType: LC	s	TestCode: EPA Method 6010B: Soil Metals							
Client ID:	LCSS	Batch ID: 39	F	anNo: 5	3746						
Prep Date:	8/27/2018	Analysis Date: 8/	28/2018	SeqNo: 1773311 Units: r				mg/Kg			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium		24 0.10	25.00	0	94.1	80	120				
Cadmium		23 0.10	25.00	0	92.7	80	120				
Chromium		23 0.30	25.00	0	92.9	80	120				
Lead		22 0.25	25.00	0	87.9	80	120				
Selenium		21 2.5	25.00	0	82.0	80	120				
Silver		4.8 0.25	5.000	0	96.7	80	120				
Sample ID	MB-39998	SampType: MI	BLK	Tes	tCode: El	PA Method	6010B: Soil	Metals			
Client ID:	PBS	Batch ID: 39	998	F	RunNo: 5	3746					
Prep Date:	8/27/2018	Analysis Date: 8/	28/2018	5	SeqNo: 1	773353	Units: mg/h	٢g			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		ND 2.5									
Sample ID	LCS-39998	SampType: LC	s	Tes	tCode: El	PA Method	6010B: Soil	Metals			
Client ID:	LCSS	Batch ID: 39	998	F	anNo: 5	3746					
Prep Date:	8/27/2018	Analysis Date: 8/	28/2018	S	SeqNo: 1	773355	Units: mg/k	٢g			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		22 2.5	25.00	0	89.1	80	120				

#### **Qualifiers:**

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Western Refining Southwest, Gallup

**Client:** 

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
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e

Sample ID	MB-40277	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	6010B: TCL	P Metals		
Client ID:	PBW	Batch	n ID: 40	277	F	RunNo: 5	4079				
Prep Date:	9/11/2018	Analysis D	ate: 9/	12/2018	S	SeqNo: 1	787012	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	100								
Chromium		0.00071	5.0								J
Sample ID	MB-40277	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	6010B: TCL	P Metals		
Client ID:	PBW	Batch	n ID: 40	277	F	RunNo: 5	4079				
Prep Date:	9/11/2018	Analysis D	ate: 9/	12/2018	5	SeqNo: 1	787014	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND	5.0								
Sample ID	LCS-40277	SampT	ype: LC	s	Tes	tCode: El	PA Method	6010B: TCL	P Metals		
Client ID:	LCSW	Batch	n ID: 40	277	F	RunNo: 5	4079				
Prep Date:	9/11/2018	Analysis D	ate: <b>9/</b>	12/2018	S	SeqNo: 1	787015	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50	100	0.5000	0	101	80	120			J
Chromium		0.49	5.0	0.5000	0	98.7	80	120			J
Lead		0.47	5.0	0.5000	0	94.9	80	120			J
Sample ID	1808D23-001AM	<b>IS</b> SampT	уре: <b>М</b>	3	Tes	tCode: El	PA Method	6010B: TCL	P Metals		
Client ID:	Rail Pipe Exca	vated Batch	n ID: 40	277	F	RunNo: 5	4079				
Prep Date:	9/11/2018	Analysis D	ate: 9/	12/2018	S	SeqNo: 1	787017	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		2.9	100	0.5000	2.494	83.6	75	125			J
Chromium		0.48	5.0	0.5000	0	96.9	75	125			J
Lead		0.50	5.0	0.5000	0.01432	96.2	75	125			J
Sample ID	1808D23-001AM	<b>ISD</b> SampT	ype: <b>M</b>	SD	Tes	tCode: El	PA Method	6010B: TCL	P Metals		
Client ID:	Rail Pipe Excav	vated Batch	n ID: 40	277	F	RunNo: <b>54079</b>					
Prep Date:	9/11/2018	Analysis D	ate: 9/	12/2018	S	SeqNo: 1	787018	Units: mg/L			
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		2.9	100	0.5000	2.494	84.6	75	125	0.172	20	J
Chromium		0.49	5.0	0.5000	0	97.7	75	125	0.806	20	J
Lead		0.50	5.0	0.5000	0.01432	97.0	75	125	0.734	20	J

#### WO#: 1808D23 p-18

HALL ENVIRONMENTAL ANALYSIS LABORATORY		1 Hawkins NE ue, NM 87109 505-345-4107	Sample Log-Ir	n Check List
Client Name: Western Refining Gallup	Work Order Number: 1808	3D23	Rop	tNo: 1
Received By: Jazzmine Burkhead 8/2	22/2018 9:05:00 AM			
Completed By: Ashley Gallegos 8/2	22/2018 10:27:29 AM	A	3	
Reviewed By: 08/08/08/08/	l8 La	beleol	by: I	10/208/22/18
Chain of Custody				
1. Is Chain of Custody complete?	Yes	No No	Not Present	3
2. How was the sample delivered?	Court	ier		
Log In				
3. Was an attempt made to cool the samples?	Yes	V No	NA	
4. Were all samples received at a temperature of >	0° C to 6.0°C Yes	No No		
5. Sample(s) in proper container(s)?	Yes	✓ No		
6. Sufficient sample volume for indicated test(s)?	Yes	V No	-	
7. Are samples (except VOA and ONG) properly pre	served? Yes	V No		
8. Was preservative added to bottles?	Yes	No No	✓ NA [	]
9. VCA visis have zero headspace?	Yes	No	No VOA Vials	
10. Were any sample containers received broken?	Yes	No	# of preserved	08/22
<ol> <li>Does paperwork match bottle labels? (Note discrepancies on chain of custody)</li> </ol>	Yes	No No		2,ef >12,uniess noted)
2. Are matrices correctly identified on Chain of Custo	ody? Yas	V No	Adjusted?	-+6
3. Is it clear what analyses were requested?	Yes	No		ZNA
14 Were all holding times able to be met? (If no, notify customer for authorization.)	Yos	V No	Checked by	95
Special Handling (if applicable)			×.	
15. Was client notified of all discrepancies with this of	rder? Yes	No	NA	ē
Person Notified:	Date			
By Whom:	Via: eMai	Phone	Fax In Person	
Regarding:			(and the substantion of the	
Client Instructions:				
16. Additional remarks:				
17. <u>Cooler Information</u> Cooler No Temp °C Condition Seal Int	act   Seal No.   Seal Dat	signed I	Bv.	
1 2.8 Good Yes	act   Seal No.   Seal Dat	te Signed I	By	

United         Tester And Factor         Cast And Factor         Construction         Constructio		10.0											and the second se	
Callup Retriery         Collup Retriery         Project Name:         Collup Retriery         Now hallownerment con additional and additional additionadditinaddity addited additional additinaddity addited additiona	Client,	Western	Andeavor			C Standard	×		A	1	A H	1 % 1 %	NVIRON	MENTAL
Marcal         Earl Pres Soil Clearup         Fail Pres Soil Clearup         Annumentation memory and memory and an age of the soil clearup         Annumentation memory and an age of the soil clearup           M32011         500         723         3721         Project #         Annumentation memory and an age of the soil clearup           M32011         500         723         3721         Project #         Annumentation and an age of the soil clearup           M32011         500         723         3721         Project #         Annumentation and an age of the soil clearup           M32011         1         Level + Full Vaidation         Market         Field + Vaidation         Annumentation and an age of the soil clearup           Market         1         Market         1         Market         Provide America (Market		Gallup R	etinery			Project Name	4						SIS LABO	RATORY
M 37:301         Forglet #         Toll Section 122         3721         Toll Section 122         3721         Toll Section 12         Toll Secti	Mailing Adv	dress:	92 GIAN	IT CROSSING F	ROAD		Rail Pipe Soil (	Cleanup	40	01 Hav	www.	(,nallen	vironmental.com	
505         722         3721         And Face	Gallup NM	87301				Project #			2 4	AL EDE	C ave	20	Lou for and and	20108
Forkit         SC6         863         0830         Project Manager.           Model:         Incelle Vestal         Incelle Vestal         Incelle Vestal           Model:         Incelle Vestal         Incelle Vestal         Incelle Vestal           Mon         Incelle Vestal         Incelle Vestal         Incelle Vestal           Mon         Incelle Vestal         Incelle Vestal         Incelle Vestal           Sample:         Incelle Vestal         Incelle Vestal         Incelle Vestal           Manix         Sample:         Incelle         Incelle         Incelle           Value         Incelle         Preservative         Incelle         Incelle         Incelle           Value         Incelle         Preservative         Incelle         Incelle         Incelle         Incelle           Value         Incelle         Preservative         Incelle         Inc	Phone #:		505		3721					1000	0-0+0	Anal	vsis Rennest	07
etterer ard Type T	email or Fa	技	505		0630	Project Mana	der:			-		-	Join Iverheest	
Time Matrix Sample Request ID Sample	QA/QC Pack	(age:		ind) a level 1	1-to-cotto	Janelle Ves						(0		
Time       Implementation       Implementation       Implementation       Implementation         Time       Mainix       Sample Request ID       Container       Preservative       Implementation         Time       Mainix       Sample Request ID       Container       Preservative       Implementation         Time       Mainix       Sample Request ID       Container       Preservative       Implementation         Type and #       Implementation         Sample Request ID       Container       Type and #       Type and #       Type and #       Implementation         Sample Request ID       Sample Request ID       Type and #       Type and #       Type and #       Implementation         Sample Request ID       Sample Request ID       Sample Request ID       Implementation       Implementation       Implementation         Sample Request ID       Sample Request ID       Sample Request ID       Implementation       Implementation       Implementation         Sample Request ID       Implementation       Sample Request ID       Implementation       Implementation       Implementation         Sample Reduct ID       Implementation       Implementation       Implementation       Implementation	Diher	3			Validation)	Samilar	1		_	-	_	SIMIS		
Image     Matrix     Sample Request ID     Container     Time       Time     Matrix     Sample Request ID     Container     Preservative       Time     Matrix     Sample Request ID     Container     Preservative       Type     Type     Type     Preservative     HEAL No.       Type     Type     Type     Sample Request ID     Container       Type     Type     Preservative     HEAL No.     Sample Read/Vib       Type     Type     Preservative     Sample Read/Vib     Sample Read/Vib       Type     Type     Preservative     Preservative     Sample Read/Vib       Type     Preservative     Preservative     Preservative     Sample Read/Vib       Type     Preservative     Preservative     Preservative     Preservative       Type     Preservatitive     Preservative	C EDD (T)	(be)				On Ice:	D/Yes	ON []	S	sO	_	-		-
Time     Matrix     Sample Request ID     Combiner Type and #     Preservative Type     HEAL No.       10:30     Solid     Fail Ploid Example Request ID     Type     1       10:30     Solid     Fail Ploid Example Request ID     1     1       10:30     Solid     Fail Ploid Example Request ID     1     1       10:30     Solid     Fail Ploid Example Request ID     1     1       10:10     Solid     Fail Ploid Example Request ID     1     1       10:10     Paintautive Br.     Paintautive Br.     1     1       10:00     Paintautive Br.     Paintautive Br.     Paintautive Br.     Paintautive Br.       10:00     Paintautive Br.     Paintautive Br.     Paintautive Br.     Paintautive Br.							perature: 2, 8		JAT	01-	-	_		
10:30         Solid         Tail Place Econstrated Solis         2 - Goz         Nome         - OO           × <t< td=""><td>Date</td><td>Time</td><td>Matrix</td><td>Sample Re</td><td>equest ID</td><td>Container Type and #</td><td>Preservative Type</td><td>HEAL NO. 1808 DZ3</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Date	Time	Matrix	Sample Re	equest ID	Container Type and #	Preservative Type	HEAL NO. 1808 DZ3						
Contraction	8/20/2018	-	Solid	Rail Pipe Exce	vated Sols	2 - 902	None	100-	×	×	-	-		
Total         Total <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td></td><td></td></th<>										-	-	-		
100 Palinquiched by: Date Time Remarks: Property January Visital Recorded by: Date Time Remarks: Time Reinquiched by: Date Time Cate Time Remarks: Proceeded by: Date Time Remarks:										-				
Total         Total <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td></th<>												-		
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

September 28, 2018

Janelle Vestal Western Refining Southwest, Gallup Rt. 3 Box 7 Gallup, NM 87301 TEL: FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1809C86

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Lab Order 1809C86

Date Reported: 9/28/2018

CLIENT: Western Refining Southwest, G	Gallup			-		-	e Excavated Soils 2	
<b>Project:</b> Rail Pipe Soil Cleanup			Colle	ection I	<b>Date:</b> 9/1	9/201	8 9:30:00 AM	
Lab ID: 1809C86-001	Matrix: S	OIL	Rec	eived I	<b>Date:</b> 9/2	21/201	8 8:55:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS						Analyst: Irm	
Diesel Range Organics (DRO)	1600	19	97	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Motor Oil Range Organics (MRO)	ND	490	490	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Surr: DNOP	0	0	50.6-138	SD	%Rec	10	9/26/2018 2:21:57 PM	40586
EPA METHOD 7471: MERCURY							Analyst: rde	
Mercury	0.047	0.0065	0.032		mg/Kg	1	9/27/2018 4:15:27 PM	40631
EPA METHOD 6010B: SOIL METALS							Analyst: pm	f
Arsenic	ND	4.5	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Barium	330	0.11	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Cadmium	ND	0.16	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Chromium	15	0.20	1.5		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Lead	16	1.2	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Selenium	ND	5.0	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Silver	ND	0.16	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
EPA METHOD 8260B: VOLATILES							Analyst: DJF	=
Benzene	0.045	0.0098	0.050	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Toluene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Ethylbenzene	0.32	0.0070	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methyl tert-butyl ether (MTBE)	0.12	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trimethylbenzene	1.2	0.0087	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3,5-Trimethylbenzene	0.40	0.0063	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloroethane (EDC)	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromoethane (EDB)	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Naphthalene	0.87	0.010	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1-Methylnaphthalene	2.1	0.0071	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	
2-Methylnaphthalene	2.3	0.0081	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Acetone	ND	0.11	1.5	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Bromobenzene	ND	0.0073	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Bromodichloromethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Bromoform	ND	0.024	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Bromomethane	ND	0.017	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	
2-Butanone	ND	0.059	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Carbon disulfide	ND	0.012	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Carbon tetrachloride	ND	0.0099	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Chlorobenzene	ND	0.0059	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Chloroethane	ND	0.033	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Chloroform	ND	0.0060	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Chloromethane 2-Chlorotoluene	ND ND	0.021	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	
Refer to the QC Summary report		0.0078	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

**Qualifiers:** \*

Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- B Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 11
- Р Sample pH Not In Range RL Reporting Detection Limit
- W
- Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1809C86

Date Reported: 9/28/2018

CLIENT: Western Refining Southwest, Project: Rail Pipe Soil Cleanup	Gallup		Client Sample ID: Rail Pipe Excavated Soils 2 Collection Date: 9/19/2018 9:30:00 AM							
Lab ID: 1809C86-001	Matrix: S	OIL					8 8:55:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA METHOD 8260B: VOLATILES							Analyst: DJI	=		
4-Chlorotoluene	ND	0.0090	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		
cis-1,2-DCE	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
cis-1,3-Dichloropropene	ND	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		
1,2-Dibromo-3-chloropropane	ND	0.014	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		
Dibromochloromethane	ND	0.0084	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		
Dibromomethane	ND	0.0049	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		
1,2-Dichlorobenzene	ND	0.0051	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,3-Dichlorobenzene	ND	0.0088	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,4-Dichlorobenzene	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Dichlorodifluoromethane	ND	0.041	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1-Dichloroethane	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1-Dichloroethene	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,2-Dichloropropane	ND	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,3-Dichloropropane	ND	0.025	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
2,2-Dichloropropane	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1-Dichloropropene	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Hexachlorobutadiene	ND	0.025	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM			
2-Hexanone	ND	0.019	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Isopropylbenzene	0.055	0.0067	0.10	JD	mg/Kg	2	9/25/2018 7:18:36 PM			
4-Isopropyltoluene	0.20	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
4-Methyl-2-pentanone	ND	0.021	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Methylene chloride	ND	0.040	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM			
n-Butylbenzene	0.30	0.0040	0.30	JD	mg/Kg	2	9/25/2018 7:18:36 PM			
n-Propylbenzene	0.30	0.0063	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM			
sec-Butylbenzene	0.16	0.0002	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Styrene	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
-	ND	0.0081	0.10	D		2	9/25/2018 7:18:36 PM			
tert-Butylbenzene 1,1,1,2-Tetrachloroethane	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1,2,2-Tetrachloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
					mg/Kg					
Tetrachloroethene (PCE)	ND	0.0080	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM 9/25/2018 7:18:36 PM			
trans-1,2-DCE	ND	0.040	0.10	D	mg/Kg	2				
trans-1,3-Dichloropropene	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,2,3-Trichlorobenzene	ND	0.0091	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,2,4-Trichlorobenzene	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1,1-Trichloroethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,1,2-Trichloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Trichloroethene (TCE)	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
Trichlorofluoromethane	ND	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM			
1,2,3-Trichloropropane	ND	0.050	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538		

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

Qualifiers: \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Lab Order **1809C86** Date Reported: **9/28/2018** 

**CLIENT:** Western Refining Southwest, Gallup Client Sample ID: Rail Pipe Excavated Soils 2 **Project:** Rail Pipe Soil Cleanup Collection Date: 9/19/2018 9:30:00 AM Lab ID: 1809C86-001 Matrix: SOIL Received Date: 9/21/2018 8:55:00 AM Result MDL PQL **Oual Units** DF **Date Analyzed Batch ID** Analyses **EPA METHOD 8260B: VOLATILES** Analyst: DJF Vinyl chloride 0.0083 9/25/2018 7:18:36 PM ND 0.10 D mg/Kg 2 40538 Xylenes, Total 0.53 0.031 0.20 D mg/Kg 2 9/25/2018 7:18:36 PM 40538 Surr: Dibromofluoromethane 89.0 70-130 D %Rec 2 9/25/2018 7:18:36 PM 40538 Surr: 1,2-Dichloroethane-d4 94.0 70-130 D %Rec 2 9/25/2018 7:18:36 PM 40538 Surr: Toluene-d8 D 86.6 70-130 %Rec 2 9/25/2018 7:18:36 PM 40538 Surr: 4-Bromofluorobenzene 120 70-130 D %Rec 2 9/25/2018 7:18:36 PM 40538 **EPA METHOD 8260B: TCLP COMPOUNDS** Analyst: DJF 9/25/2018 12:59:39 PM 40538 Benzene 0.055 0.049 0.50 10 J ppm

Surr: 1,2-Dichloroethane-d4	88.2		70-130	%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: 4-Bromofluorobenzene	104		70-130	%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Dibromofluoromethane	87.2		70-130	%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Toluene-d8	91.5		70-130	%Rec	10	9/25/2018 12:59:39 PM	40538
EPA METHOD 8015D MOD: GASOLIN	IE RANGE					Analyst: AG	
Gasoline Range Organics (GRO)	94	0.94	5.0	mg/Kg	1	9/25/2018 2:51:21 PM	40538
Surr: BFB							

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

	Refining Southwest, Gallup e Soil Cleanup			
Sample ID MB-40586	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 40586	RunNo: 54424		
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1803489	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	ual
Diesel Range Organics (DRO)	ND 10			
Motor Oil Range Organics (MRO) Surr: DNOP	ND 50 11 10.00	110 50.6	138	
Sample ID LCS-40586	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 40586	RunNo: 54424		
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1803490	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	ual
Diesel Range Organics (DRO)	54 10 50.00	0 109 70	130	
Surr: DNOP	5.7 5.000	113 50.6	138	
Sample ID LCS-40568	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 40568	RunNo: 54424		
Prep Date: 9/25/2018	Analysis Date: 9/26/2018	SeqNo: 1805098	Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	ual
Surr: DNOP	5.1 5.000	101 50.6	138	
Sample ID MB-40568	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 40568	RunNo: 54424		
Prep Date: 9/25/2018	Analysis Date: 9/26/2018	SeqNo: 1805099	Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	ual
Surr: DNOP	11 10.00	106 50.6	138	

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 4 of 11

WO#: 1809C86 28-Sep-18

WO#:	1809C86

28-Sep-18	8
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Client: Wester	n Refining S	Southwes	st, Gallup							
Project: Rail Pij	pe Soil Clear	nup								
Sample ID mb-40538	SampT	Гуре: <b>МВ</b>	BLK	Tes	tCode: I	EPA Method	8260B: Volat	iles		
Client ID: PBS	Batch	h ID: 405	538	F	RunNo:	54394				
Prep Date: 9/24/2018	Analysis D	Date: 9/2	25/2018	:	SeqNo:	1801939	Units: <b>mg/k</b>	ģ		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	CowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.031	0.15								J
2-Butanone	0.081	0.50								J
Carbon disulfide	ND	0.50								0
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
I,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
	ND									
1,3-Dichloropropane	ND	0.050								

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 5 of 11

WO#:	1809C86

28-Sep-18

	Refining S e Soil Clear		st, Gallup							
Sample ID mb-40538	SampT	Гуре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: Volat	iles		
Client ID: PBS		h ID: <b>40</b>		F	RunNo: 5	4394				
Prep Date: 9/24/2018	Analysis E				SeqNo: 1		Units: <b>mg/k</b>	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	0.022	0.50								J
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050 0.050								
1,1,1-Trichloroethane 1,1,2-Trichloroethane	ND ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.000								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.000								
Surr: Dibromofluoromethane	0.47	5.10	0.5000		94.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			
Sample ID Ics-40538	SampT	Type: LC	S TestCode: EPA Method 8260B: Volatiles							
Client ID: LCSS	Batcl	h ID: 40	538	F	RunNo: 5	4394				
Prep Date: 9/24/2018	Analysis D				SeqNo: 1		Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	70	130			
Toluene	0.90	0.050	1.000	0	89.8	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			

#### **Qualifiers:**

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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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	Refining S Soil Clea		st, Gallup							
Sample ID Ics-40538	Samp	Гуре: <b>LC</b>	S	Tes	tCode: El	PA Method	8260B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 40	538	F	RunNo: 54	4394				
Prep Date: 9/24/2018	Analysis [	Date: <b>9/</b>	25/2018	5	SeqNo: 1	801940	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130		-	
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			
Sample ID 1809c86-001ams	Samp	Гуре: МS	;	Tes	tCode: El	PA Method	8260B: Volat	tiles		
Client ID: Rail Pipe Excavat	ed Batc	h ID: 40	538	F	RunNo: 54	4394				
Prep Date: 9/24/2018	Analysis [	Date: <b>9/</b>	25/2018	S	SeqNo: 1	801942	Units: mg/H	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0.04497	99.6	51.9	158			
Toluene	0.98	0.10	1.000	0	98.1	64.6	132			
Chlorobenzene	1.1	0.10	1.000	0	107	62.8	136			
1,1-Dichloroethene	1.0	0.10	1.000	0	101	42.4	170			
Trichloroethene (TCE)	0.91	0.10	1.000	0	91.5	70	130			
Surr: Dibromofluoromethane	0.89		1.000		88.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.95		1.000		95.2	70	130			
Surr: Toluene-d8	0.92		1.000		91.6	70	130			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	70	130			
Sample ID 1809c86-001amsc	<b>I</b> Samp	Гуре: МS	D	Tes	tCode: El	PA Method	8260B: Vola	tiles		
Client ID: Rail Pipe Excavat	ed Batc	h ID: 40	538	F	RunNo: 54	4394				
Prep Date: 9/24/2018	Analysis [	Date: <b>9/</b>	25/2018	S	SeqNo: 1	801943	Units: <b>mg/k</b>	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9960	0.04497	110	51.9	158	8.81	20	
Toluene	1.0	0.10	0.9960	0	100	64.6	132	1.77	20	
Chlorobenzene	1.1	0.10	0.9960	0	110	62.8	136	2.25	20	
1,1-Dichloroethene	1.1	0.10	0.9960	0	106	42.4	170	4.41	20	
Trichloroethene (TCE)	0.98	0.10	0.9960	0	98.8	70	130	7.29	20	
Surr: Dibromofluoromethane	0.92		0.9960		92.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.97		0.9960		97.0	70	130	0	0	
Surr: Toluene-d8	0.88		0.9960		88.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.3		0.9960		130	70	130	0	0	

#### **Qualifiers:**

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- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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WO#: **1809C86** 

28-Sep-18

### WO#: **1809C86**

Qual

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	rn Refining S ipe Soil Clea		st, Gallup						
Sample ID mb-40538	Samp	Гуре: МЕ	BLK	Test	Code: E	PA Method	8260B: TCLP	Compou	nds
Client ID: PBS	Batc	h ID: <b>40</b>	538	R	unNo: 5	4394			
Prep Date: 9/24/2018	Analysis [	Date: 9/	25/2018	S	eqNo: 1	801953	Units: <b>ppm</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit
Benzene	ND	0.050							
1,2-Dichloroethane (EDC)	ND	0.050							
2-Butanone	0.081	20							
Carbon tetrachloride	ND	0.050							
Chlorobenzene	ND	10							
Chloroform	ND	0.60							
1,4-Dichlorobenzene	ND	0.75							
1,1-Dichloroethene	ND	0.070							
Tetrachloroethene (PCE)	ND	0.070							
Trichloroethene (TCE)	ND	0.050							
Vinyl chloride	ND	0.020							
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130		
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130		
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130		
Surr: Toluene-d8	0.45		0.5000		91.0	70	130		
Sample ID Ics-40538	Samp	Гуре: <b>LC</b>	s	Test	Code: E	PA Method	8260B: TCLP	Compou	nds
Client ID: LCSS	Batc	h ID: 40	538	R	unNo: 5	4394			

Client ID: LCSS	Batcl	n ID: <b>40</b>	538	R	RunNo: 5	4394				
Prep Date: 9/24/2018	Analysis D	Date: 9/	25/2018	S	SeqNo: 1	801954	Units: <b>ppm</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.050	1.000	0	93.4	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			

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0.0073

0.033

0.006660

Client:	Westerr	n Refining Southwe	st, Gallup							
Project:	Rail Pip	e Soil Cleanup								
Sample ID	MB-40631	SampType: MI	BLK	Tes	tCode: EF	PA Method	7471: Mercu	ry		
Client ID:	PBS	Batch ID: 40	631	R	anNo: <b>5</b> 4	4464				
Prep Date:	9/27/2018	Analysis Date: 9/	27/2018	S	SeqNo: 18	305335	Units: <b>mg/K</b>	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.033								
Sample ID	LCS-40631	SampType: LC	s	Tes	tCode: EF	PA Method	7471: Mercu	ry		
Client ID:	LCSS	Batch ID: 40	631	R	anNo: 54	4464				
Prep Date:	9/27/2018	Analysis Date: 9/	27/2018	S	SeqNo: 18	305336	Units: <b>mg/K</b>	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17 0.033	0.1667	0	103	80	120			
Sample ID	LLLCS-40631	SampType: LC	SLL	Tes	tCode: EF	PA Method	7471: Mercu	ry		
Client ID:	BatchQC	Batch ID: 40	631	R	unNo: 54	4464				
Prep Date:	9/27/2018	Analysis Date: 9/	27/2018	S	SeqNo: 18	805337	Units: <b>mg/K</b>	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

0

110

70

130

#### **Qualifiers:**

Mercury

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J

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QC SUN Hall Envi					ory, Inc.					WO#:	1809C86 28-Sep-18
Client: Project:		n Refining So be Soil Clean		st, Gallup							
Sample ID ME	3-40535	SampT	ype: ME	3LK	Tes	tCode: E	PA Method	6010B: Soil I	Metals		
Client ID: PB	S	Batch	n ID: <b>40</b>	535	F	RunNo: 5	54358				
Prep Date: 9/	/24/2018	Analysis D	ate: 9/	/24/2018	S	SeqNo: 1	800807	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	2.5								
Barium		ND	0.10								
Cadmium		ND	0.10								
Chromium		0.052	0.30								J
Lead		ND	0.25								
Selenium		1.1	2.5								J
Silver		ND	0.25								
Sample ID LC	S-40535	SampT	ype: LC	s	Tes	tCode: E	PA Method	6010B: Soil I	Metals		
Client ID: LC	SS	Batch	n ID: 40	535	F	RunNo: 5	54358				
Prep Date: 9/	/24/2018	Analysis D	ate: 9/	/24/2018	ę	SeqNo: 1	800811	Units: <b>mg/K</b>	g		

					•		0	0		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.6	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Lead	25	0.25	25.00	0	98.6	80	120			
Selenium	23	2.5	25.00	0	93.6	80	120			
Silver	5.3	0.25	5.000	0	106	80	120			

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- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W
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Client: Project:		Refining Sou e Soil Cleanu		st, Gallup							
										_	
	lcs-40538	SampTyp						8015D Mod:	Gasoline	Range	
Client ID:	LCSS	Batch II	D: <b>40</b>	538	R	RunNo: 5	4391				
Prep Date:	9/24/2018	Analysis Dat	e: 9/	25/2018	S	SeqNo: 1	802094	Units: mg/K	íg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	25	5.0	25.00	0	101	70	130			
Surr: BFB		460		500.0		91.6	70	130			
Sample ID	mb-40538	SampTyp	e: ME	BLK	Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	PBS	Batch II	D: 40	538	R	RunNo: 5	4391				
Prep Date:	9/24/2018	Analysis Dat	e: <b>9/</b>	25/2018	S	SeqNo: 1	802095	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	ge Organics (GRO)	ND 500	5.0	500.0		100	70	130			
O a serie ID		0T			<b></b>				o		
	lcs-40548	SampTyp						8015D Mod:	Gasoline	Range	
Client ID:	LCSS	Batch II	D: <b>40</b>	548	F	RunNo: 5	4391				
Prep Date:	9/24/2018	Analysis Dat	e: 9/	25/2018	S	SeqNo: 1	802097	Units: %Re	6		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		470		500.0		93.6	70	130			
Sample ID	mb-40548	SampTyp	e: ME	BLK	Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	PBS	Batch II	D: 40	548	R	RunNo: 5	4391				
Prep Date:	9/24/2018	Analysis Dat	e: <b>9/</b>	25/2018	S	SeqNo: 1	802098	Units: %Re	6		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		490		500.0		97.0	70	130			

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuguerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.con

### Sample Log-In Check List

Client Name: Western Refining Gallup Wo	rk Order Number: 1809C86		RcptNo	: 1
Received By: Jazzmine Burkhead 9/21/2	2018 8:55:00 AM	hyper Bucklad		
Completed By: Ashley Gallegos 9/21/2	2018 10:45:18 AM	AG		_
Reviewed By: $O9 a  $	18 Labeled	by:_	JAB	09/21/18
<u>Chain of Custody</u>				v
1. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present	
2. How was the sample delivered?	Courier			
Log In				
3. Was an attempt made to cool the samples?	Yes 🗹	No 🗔	NA 🗌	
4. Were all samples received at a temperature of >0°	C to 6.0°C Yes 🗹	No 🗌	NA 🗌	
5. Sample(s) in proper container(s)?	Yes 🗹	No 🗌		
6. Sufficient sample volume for indicated test(s)?	Yes 🔽	No 🗌		
7. Are samples (except VOA and ONG) properly present	ved? Yes 🗹	No 🗌		
8. Was preservative added to bottles?	Yes 🗌	No 🗹	NA 🗌	
9. VOA vials have zero headspace?	Yes 🗌	No 🗌	No VOA Vials 🗹	tis
10. Were any sample containers received broken?	Yes 🗆	No 🗹	# of preserved	21211
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗌	bottles checked for pH:	>12 unless noted)
12. Are matrices correctly identified on Chain of Custody	? Yes 🗹	No 🗌	Adjusted	<u>L</u>
13. Is it clear what analyses were requested?	Yes 🗹	No 🗌		
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	No 🗌	Checkéd by:	
Special Handling (if applicable)				
15. Was client notified of all discrepancies with this order	r? Yes 🗌	No 🗌	NA 🗹	
Person Notified:	Date			
By Whom:	nongi 🦉 ya kata ka kata ka kata kata kata kata	hone 📋 Fax	In Person	
Regarding:				
Client Instructions:				
16. Additional remarks:				_]
17. Cooler Information Cooler No Temp °C Condition Seal Intac	L Seal No Seal Date	Signed By		

Tit.       WesternhAnderson:       Dispection       Dispection       Cualun Refinem X. <sup>Call</sup> on Refine X. <sup>Call</sup> on X.	Weiternichkendor         Claune Reference         Claune Reference         Claune Reference         Claune Reference         Claune Reference         MALY STA REDURCTIONAL           Colland Reference         Project #         Inal Pie Soli Clainup         Project #         MALY STA REDURCTION Reference         MALY STA REDURCTION Reference           Reference         Project #         Inal Pie Soli Clainup         Inal Pie Soli Clainup </th <th>Wetter/Information         Image: Solution         Image:</th> <th></th> <th>o-u</th> <th>I-CUSI</th> <th>Chain-or-Custody Record</th> <th>ord</th> <th></th> <th>IIIIe.</th> <th></th>	Wetter/Information         Image: Solution         Image:		o-u	I-CUSI	Chain-or-Custody Record	ord		IIIIe.											
Gallup Ferfinery         Collect Name:         Project Name:         Monkins NE         Alburgungue. MI 67703           1005-85:         22 GIANT CROSSING ROAD         Real Pipe Soil Cleanup         Annole Soil Cleanup         Annole Soil Cleanup         Annole Soil Cleanup           1017-01         1015-01         2016         722         373         Fix 600-345-307         Fix 600-345-407           1017-01         101         101         101         101         101         101         101           101         <	Callun Perfirery         Project Name:         Proje	Collume         Project Name.         Project Name.           Rail Dies.         25 cultur Cercossivio Fond         Rail Pipe Soil Clearup         Merinitarium           Rail Dies.         25 cultur Cercossivio Fond         Project Name.         Merinitarium           Rail Dies.         25 cultur Cercossivio Fond         Project Name.         Merinitarium           Rail Dies.         26 cultur Cercossivio Fond         Project Name.         Merinitarium           Rail Dies.         26 cultur Cercossivio Fond         Project Name.         Merinitarium           Rail Dies.         26 cultur Cercossivio Fond         Project Name.         Merinitarium           Merinitarium         Bernitarium         Project Name.         Merinitarium         Merinitarium           Merinitarium         Merinitarium         Merinitarium         Merinitarium         Merinitarium         Merinitarium           Merinitarium         Merinitarium         Sample Reculuest ID         Tope and H         Project Name.         Project Name.         Project Name.           Merinitarium         Merinitarium         Sample Reculuest ID         Tope and H         Project Name.         Project Name.         Project Name.           Merinitarium         Merinitarium         Project Name.         Project Name.         Project Name.         P		estern//	Andeavor		:	□ Standard											ĬŽ	יא
Iddes:     29 CIANT CROSSING ROAD     Rail Plee Sol Cleanty       187301     187301     1901 Hawkins NE       187301     1000     172       187301     1000     172       187301     1000     172       187301     1000     172       187301     1000     170       187301     1000     1000       187301     1000     1000       187301     1000     1000       18701     1000     1000       18701     1000     1000       19701     1000     1000       19702     1000     1000       19703     1000     1000       19704     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000     1000       19705     1000       19705     1000 <td>Idiaces:         22 GIANT CROOSING FROAD         Rall Pipe Soil Cleanup         Albungange.         Al</td> <td>Iddice:       22 CIANT CroCOSINO FOAD       Real Pipe Soil Cleanup       Althroughe MM 3710         167301       771       10       505       772       Fab soil Soil Soil Soil Soil Soil Soil Soil S</td> <td>Ga</td> <td>illup Re</td> <td>sfinery</td> <td></td> <td>1</td> <td>Project Name</td> <td>1</td> <td></td> <td></td> <td></td> <td>3</td> <td>ed ww</td> <td>llenvirc</td> <td>nments</td> <td></td> <td>5</td> <td>5</td> <td>7</td>	Idiaces:         22 GIANT CROOSING FROAD         Rall Pipe Soil Cleanup         Albungange.         Al	Iddice:       22 CIANT CroCOSINO FOAD       Real Pipe Soil Cleanup       Althroughe MM 3710         167301       771       10       505       772       Fab soil Soil Soil Soil Soil Soil Soil Soil S	Ga	illup Re	sfinery		1	Project Name	1				3	ed ww	llenvirc	nments		5	5	7
IF a bb 345-301         Tel, B05-305-3015         Fab 536-345101           Set 722         7271         Tel, B05-345-4101           Set 722         7271         Tel, B05-345-4101           Set 722         Tel, B05-345-4101           Set 72         Tel, B05-345-4101           Mint Colspan="2"         Antes Recurstion           Mint Colspan="2">Set 10         Colspan="2">Colspan="2">Colspan="2"           Time         Mint Colspan="2"           Time         Mint Colspan="2"           Time         Mint Colspan="2"           Time         Mint Colspa= 4000            Colspa= 4000	IERGOL         File ISIG-305-307         File	IR301         Total 60:343-3015         Fax 60:343-3015         Fax 60:343-3015         Fax 60:343-3015           IR30         Constants         Constants         Constants         Constants         Constants           Mark         Sample Value         Constants         Constants         Constants         Constants         Constants           Mark         Sample Request ID         Constants         Properties         Constants         Properties         Constants         Constants           Mark         Sample Request ID         Constants         Properties         Constants         Properties         Constants         Properties           Mark         Sample Request ID         Constants         Properties         Properties         Properties         Properties           Mark         Sample Request ID         Constants         Properties         Properties         Properties         Properties           Mark         Sample Request ID         Constants         Properties         Properties         Properties         Properties           Mark         Sample Request ID         Constants         Properties         Properties         Properties         Properties           Mark         Sample Request ID         Constants         Properis         Properties <td>ing Addres</td> <td>vi</td> <td>92 GIAN</td> <td>T CROSSING</td> <td>ROAD</td> <td></td> <td>Rail Pipe Soil</td> <td>Cleanup</td> <td>4</td> <td>901 H</td> <td>awking.</td> <td>NE NE</td> <td>- Albuc</td> <td>neraue</td> <td>. NM 87</td> <td>7109</td> <td></td> <td></td>	ing Addres	vi	92 GIAN	T CROSSING	ROAD		Rail Pipe Soil	Cleanup	4	901 H	awking.	NE NE	- Albuc	neraue	. NM 87	7109		
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	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.		~		1 9	J	Received by:	mulled	Ime K OSS	Remark	is:								
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

November 09, 2018

Janelle Vestal Marathon 92 Giant Crossing Rd Gallup, NM 87301 TEL: (505) 722-3833 FAX (505) 722-0210

RE: Rail Pipe Soil Cleanup

OrderNo.: 1811207

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 15 sample(s) on 11/5/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1811207 Date Reported: 11/9/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon

Project: Rail Pipe Soil Cleanup

### Client Sample ID: RBM 250611 Collection Date: 11/5/2018 12:00:00 PM Received Date: 11/5/2018 5:04:00 PM

Lab ID: 1811207-001	Matrix: SOIL	Rec	eived Date:	11/5/2	018 5:04:00 PM
Analyses	Result	PQL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst: AG
Benzene	ND	0.12	mg/Kg	5	11/7/2018 10:09:06 AM
Surr: 1,2-Dichloroethane-d4	94.1	70-130	%Rec	5	11/7/2018 10:09:06 AM
Surr: 4-Bromofluorobenzene	58.5	70-130	S %Rec	5	11/7/2018 10:09:06 AM
Surr: Dibromofluoromethane	96.6	70-130	%Rec	5	11/7/2018 10:09:06 AM
Surr: Toluene-d8	101	70-130	%Rec	5	11/7/2018 10:09:06 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

**Analytical Report** Lab Order 1811207 Date Reported: 11/9/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon

Project: Rail Pipe Soil Cleanup

Client Sample ID: EVB 12194 Collection Date: 11/5/2018 12:05:00 PM Matrix: SOIL **Received Date:** 11/5/2018 5:04:00 PM

Lab ID: 1811207-	002	Matrix: SOIL	<b>Received Date:</b> 11/5/2018 5:04:00 PM				
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8260	B: VOLATILES SHO	RT LIST				Analyst: AG	
Benzene		ND	0.12	mg/Kg	5	11/7/2018 10:37:40 AM	
Surr: 1,2-Dichloroe	ethane-d4	97.5	70-130	%Rec	5	11/7/2018 10:37:40 AM	
Surr: 4-Bromofluor	obenzene	93.3	70-130	%Rec	5	11/7/2018 10:37:40 AM	
Surr: Dibromofluor	omethane	98.3	70-130	%Rec	5	11/7/2018 10:37:40 AM	
Surr: Toluene-d8		101	70-130	%Rec	5	11/7/2018 10:37:40 AM	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1811207 Date Reported: 11/9/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon

Client Sample ID: VB 16099 Collection Date: 11/5/2018 12:10:00 PM

<b>Project:</b>	Rail Pipe Soil Cleanup	Collection Date: 11/5/2018 12:10:00 PM						
Lab ID:	1811207-003	Matrix: SOIL	<b>Received Date:</b> 11/5/2018 5:04:00 PM					
Analyses		Result	PQL Qua	al Units	DF	Date Analyzed		
EPA METHOD 8260B: VOLATILES SHORT LIST Analyst: A						Analyst: AG		
Benzene	e	ND	0.12	mg/Kg	5	11/7/2018 11:06:23 AM		
Surr:	1,2-Dichloroethane-d4	98.9	70-130	%Rec	5	11/7/2018 11:06:23 AM		
Surr:	4-Bromofluorobenzene	88.9	70-130	%Rec	5	11/7/2018 11:06:23 AM		
Surr:	Dibromofluoromethane	96.7	70-130	%Rec	5	11/7/2018 11:06:23 AM		
Surr:	Toluene-d8	101	70-130	%Rec	5	11/7/2018 11:06:23 AM		

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1811207

11/7/2018 11:35:11 AM

11/7/2018 11:35:11 AM

#### **CLIENT:** Marathon Client Sample ID: VB 12034 **Project:** Rail Pipe Soil Cleanup Collection Date: 11/5/2018 12:15:00 PM Received Date: 11/5/2018 5:04:00 PM 1811207-004 Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: AG ND 0.12 11/7/2018 11:35:11 AM Benzene mg/Kg 5 Surr: 1,2-Dichloroethane-d4 70-130 %Rec 5 11/7/2018 11:35:11 AM 96.7 Surr: 4-Bromofluorobenzene 69.4 70-130 S %Rec 5 11/7/2018 11:35:11 AM

96.9

101

70-130

70-130

%Rec

%Rec

5

5

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Surr: Dibromofluoromethane

Surr: Toluene-d8

Date Reported: 11/9/2018

11/7/2018 12:03:40 PM

11/7/2018 12:03:40 PM

11/7/2018 12:03:40 PM

5

5

5

%Rec

%Rec

%Rec

#### **CLIENT:** Marathon Client Sample ID: VB 12030 Rail Pipe Soil Cleanup **Project:** Collection Date: 11/5/2018 12:20:00 PM 1811207-005 Received Date: 11/5/2018 5:04:00 PM Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: AG ND 0.12 5 11/7/2018 12:03:40 PM Benzene mg/Kg Surr: 1,2-Dichloroethane-d4 94.4 70-130 %Rec 5 11/7/2018 12:03:40 PM

99.6

93.8

105

70-130

70-130

70-130

## Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

#### **CLIENT:** Marathon Client Sample ID: VB 12119 Rail Pipe Soil Cleanup **Project:** Collection Date: 11/5/2018 12:25:00 PM 1811207-006 Received Date: 11/5/2018 5:04:00 PM Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: AG ND 0.12 5 11/7/2018 12:32:22 PM Benzene mg/Kg Surr: 1,2-Dichloroethane-d4 97.7 70-130 %Rec 5 11/7/2018 12:32:22 PM Surr: 4-Bromofluorobenzene 70-130 %Rec 5 11/7/2018 12:32:22 PM 93.0 Surr: Dibromofluoromethane 97.6 70-130 %Rec 5 11/7/2018 12:32:22 PM Surr: Toluene-d8 70-130 %Rec 5 103 11/7/2018 12:32:22 PM

## Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

11/7/2018 1:01:00 PM

## Hall Environmental Analysis Laboratory, Inc.

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Benzene

CLIENT:	Marathon		Client Sample ID:	VB 12	095		
Project:	Rail Pipe Soil Cleanup	Collection Date: 11/5/2018 12:35:00 PM					
Lab ID:	1811207-007	Matrix: SOIL	<b>Received Date:</b>	11/5/2	018 5:04:00 PM		
Analyses		Result	PQL Qual Units	DF	Date Analyzed		
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: AG		

5

5

5

5

5

mg/Kg

%Rec

%Rec

%Rec

%Rec

0.12

70-130

70-130

70-130

70-130

ND

96.6

103

96.7

100

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon

Client Sample ID: VB 11004 Collection Date: 11/5/2018 12:45:00 PM

Project:	Rail Pipe Soil Cleanup	Collection Date: 11/5/2018 12:45:00 PM						
Lab ID:	1811207-008	Matrix: SOIL	Rece	11/5/2	018 5:04:00 PM			
Analyses		Result	PQL Qua	al Units	DF	Date Analyzed		
EPA ME	THOD 8260B: VOLATILES SH	IORT LIST				Analyst: AG		
Benzene	9	ND	0.12	mg/Kg	5	11/7/2018 1:29:31 PM		
Surr:	1,2-Dichloroethane-d4	97.4	70-130	%Rec	5	11/7/2018 1:29:31 PM		
Surr:	4-Bromofluorobenzene	188000	70-130 S	%Rec	5	11/7/2018 1:29:31 PM		
Surr:	Dibromofluoromethane	96.9	70-130	%Rec	5	11/7/2018 1:29:31 PM		
Surr:	Toluene-d8	104	70-130	%Rec	5	11/7/2018 1:29:31 PM		

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

#### **CLIENT:** Marathon Client Sample ID: VB 12209 Rail Pipe Soil Cleanup **Project:** Collection Date: 11/5/2018 12:50:00 PM 1811207-009 Received Date: 11/5/2018 5:04:00 PM Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF ND 0.12 5 11/7/2018 11:07:57 AM Benzene mg/Kg Surr: 1,2-Dichloroethane-d4 95.0 70-130 %Rec 5 11/7/2018 11:07:57 AM 5 Surr: 4-Bromofluorobenzene 95.3 70-130 %Rec 11/7/2018 11:07:57 AM Surr: Dibromofluoromethane 93.0 70-130 %Rec 5 11/7/2018 11:07:57 AM Surr: Toluene-d8 70-130 %Rec 5 11/7/2018 11:07:57 AM 92.7

## Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 9 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT:	Marathon		Client S	ample ID:	VB 11	1128	
Project:	Rail Pipe Soil Cleanup		Collec	tion Date:	11/5/2	2018 12:55:00 PM	
Lab ID:	1811207-010	Matrix: SOIL         Received Date: 11/5/2018 5:04:00 PM					
Analyses		Result	PQL Qua	al Units	DF	Date Analyzed	
EPA MET	HOD 8260B: VOLATILES SI	HORT LIST				Analyst: DJF	
Benzene		ND	0.12	mg/Kg	5	11/7/2018 11:37:19 AM	
Surr: 1	,2-Dichloroethane-d4	98.7	70-130	%Rec	5	11/7/2018 11:37:19 AM	
Surr: 4	-Bromofluorobenzene	102	70-130	%Rec	5	11/7/2018 11:37:19 AM	
Surr: D	bibromofluoromethane	95.1	70-130	%Rec	5	11/7/2018 11:37:19 AM	
Surr: T	oluene-d8	90.7	70-130	%Rec	5	11/7/2018 11:37:19 AM	

# Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 10 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: Marathon		Client S	ample ID:	VB 12	2059			
Project: Rail Pipe Soil Cleanup		Collec	tion Date:	11/5/2	2018 1:05:00 PM			
Lab ID: 1811207-011	Matrix: SOIL	Matrix: SOIL         Received Date: 11/5/2018 5:04:00 PM						
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed			
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF			
Benzene	ND	0.12	mg/Kg	5	11/7/2018 12:06:55 PM			
Surr: 1,2-Dichloroethane-d4	99.6	70-130	%Rec	5	11/7/2018 12:06:55 PM			
Surr: 4-Bromofluorobenzene	99.0	70-130	%Rec	5	11/7/2018 12:06:55 PM			
Surr: Dibromofluoromethane	94.7	70-130	%Rec	5	11/7/2018 12:06:55 PM			
Surr: Toluene-d8	88.8	70-130	%Rec	5	11/7/2018 12:06:55 PM			

# Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 11 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: Marathon		Client S	Sample ID:	VB 12	2050
Project: Rail Pipe Soil Cleanup		Collec	ction Date:	11/5/2	2018 1:15:00 PM
Lab ID: 1811207-012	Matrix: SOIL	Rece	eived Date:	11/5/2	2018 5:04:00 PM
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst: DJF
Benzene	ND	0.12	mg/Kg	5	11/7/2018 12:36:23 PM
Surr: 1,2-Dichloroethane-d4	98.2	70-130	%Rec	5	11/7/2018 12:36:23 PM
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	5	11/7/2018 12:36:23 PM
Surr: Dibromofluoromethane	96.2	70-130	%Rec	5	11/7/2018 12:36:23 PM
Surr: Toluene-d8	90.2	70-130	%Rec	5	11/7/2018 12:36:23 PM

# Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 12 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: Marathon		Client S	Sample ID:	LH 28	363
Project: Rail Pipe Soil Cleanup		Colle	ction Date:	11/5/2	2018 1:25:00 PM
Lab ID: 1811207-013	Matrix: SOIL	Rece	eived Date:	11/5/2	2018 5:04:00 PM
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst: DJF
Benzene	ND	0.12	mg/Kg	5	11/7/2018 1:05:37 PM
Surr: 1,2-Dichloroethane-d4	99.0	70-130	%Rec	5	11/7/2018 1:05:37 PM
Surr: 4-Bromofluorobenzene	112	70-130	%Rec	5	11/7/2018 1:05:37 PM
Surr: Dibromofluoromethane	94.6	70-130	%Rec	5	11/7/2018 1:05:37 PM
Surr: Toluene-d8	89.4	70-130	%Rec	5	11/7/2018 1:05:37 PM

# Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 13 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

#### **CLIENT:** Marathon Client Sample ID: VB 12131 Collection Date: 11/5/2018 1:30:00 PM **Project:** Rail Pipe Soil Cleanup 1811207-014 Received Date: 11/5/2018 5:04:00 PM Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF ND 0.12 5 11/7/2018 1:34:55 PM Benzene mg/Kg Surr: 1,2-Dichloroethane-d4 99.4 70-130 %Rec 5 11/7/2018 1:34:55 PM 5 Surr: 4-Bromofluorobenzene 108 70-130 %Rec 11/7/2018 1:34:55 PM Surr: Dibromofluoromethane 97.2 70-130 %Rec 5 11/7/2018 1:34:55 PM Surr: Toluene-d8 70-130 %Rec 5 90.7 11/7/2018 1:34:55 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 14 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

ory, Inc.

#### **CLIENT:** Marathon Client Sample ID: VB 11057 **Project:** Rail Pipe Soil Cleanup Collection Date: 11/5/2018 1:35:00 PM Received Date: 11/5/2018 5:04:00 PM 1811207-015 Lab ID: Matrix: SOIL Analyses Result PQL Qual Units DF **Date Analyzed EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF ND 0.12 5 11/7/2018 2:04:50 PM Benzene mg/Kg Surr: 1,2-Dichloroethane-d4 97.5 70-130 %Rec 5 11/7/2018 2:04:50 PM 5 Surr: 4-Bromofluorobenzene 70-130 %Rec 11/7/2018 2:04:50 PM 101 Surr: Dibromofluoromethane 94.4 70-130 %Rec 5 11/7/2018 2:04:50 PM Surr: Toluene-d8 70-130 %Rec 5 11/7/2018 2:04:50 PM 92.3

Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 15 of 16
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

WO#: 1811207 09-Nov-18

Client: Marath	on									
Project: Rail Pi	pe Soil Clear	nup								
Sample ID Ics-41386	SampT	ype: LC	s	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batch	h ID: 41	386	F	RunNo: 5	5466				
Prep Date: 11/6/2018	Analysis D	Date: 11	1/7/2018	S	SeqNo: 1	846669	Units: <b>mg/k</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.7	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.3	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			
Sample ID mb-41386	SampT	SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch	h ID: 41	386	F	RunNo: 5	5466				
Prep Date: 11/6/2018	Analysis D	Date: 11	1/7/2018	S	SeqNo: 1	847971	Units: <b>mg/H</b>	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.8	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.8	70	130			
Surr: Toluene-d8	0.50		0.5000		99.5	70	130			

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 16 of 16

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Albi, TEL: 505-345-3975 Website: www.ha	4901 Ha quarque N FAX: 505	ekim NE M 87109 345-4107	Sar	mple Log-In Check List
Client Name MARATHON GALLUP	Work Order Number	1811207			ReptNo: 1
Received By: Erin Melendrez 11	/5/2018 5:04:00 PM		UL	MA	5
Completed By: Isalah Ortiz 11 Reviewed By: VV2 11 018	1/6/2018 8:33:26 AM		I	Cart-	
LB DAD Wolf 18 Chain of Custody					
1. Is Chain of Custody complete?		Yes 🖌	h	10 []	Not Present
2. How was the sample delivered?		Client			
Log In					C A
3. Was an attempt made to cool the samples?		Yes 🗹	N	lo 🗌	NA 🗌
4. Were all samples received at a temperature of >	0° C to 6 0°C	Yes 🔽	N	lo 🗋	NA L
5. Sample(s) in proper container(s)?		Yes 🗹	N		
6. Sufficient sample volume for indicated test(s)?		Yes 🗹	N	•	
7. Are samples (except VCA and ONG) properly pro	eserved?	Yes 🗐	N	0	
8. Was preservative added to bottles?		Yes 🗆	N		NA 🗌
9. VOA vials have zero headspace?		Yes 🗌	N	0	No VCA Vials
10. Were any sample containers received broken?		Yes 🗍	N	0	/
11. Does paperwork match bottle labels?		Ves 🔽	N	• 🗆	# of preserved bottles checked for pH.
(Note discrepancies on chain of custody)				-	(<2 or 12 unless noted)
2 Are matrices correctly identified on Chain of Cust		Yes V	N		Adjusted?
13. Is it clear what analyses were requested?		Yes V		• []	Law
14. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗹	N	0 []	Checked by: DAD 11/06/18
Special Handling (if applicable)					r.
15. Was client notified of all discrepancies with this it	order?	Yes 🗐	N	0 []	NA 🗹
Person Notified:	Date:				
By Whom:	Via:	eMail	Phone	Fax	In Person
Regarding: Client Instructions:					
16. Additional remarks					
17. Cooler Information					
Cooler No Temp C Condition Seal In	the second se	al Date	Signe	d By	17
1 8.2 Good Not Pre	sent				1

Gallup Refinery         Callup Refinery         Project Rame         Rait Pipe Soli Cearup         Soli Fail           00ress         III CANT CROSSING ROAD         Rait Pipe Soli Cearup         100	Outlow         Control Reserve         Protect Name         Protect Name         New Mallen Francementation           00088         26 (ANT CROSSING FICUD)         France         Real Plote Soil         Protect Name         Real Plote Soil         Real Plot	Client:	Marathon Petroleum	n Petroleu	Marathon Petroleum	Standard	X Rush ASA	SAP		T	ANAL		HALL ENVIRONMENTAL ANALYSIS LABORATORY	ATORY
Indicate         Set ANT CROSSING ROAD         Rail Pipe Soil Centro         Rail Containe         Pipe Rest         Rail Containe         Pipe Res	Oddes.         Ze GANT CRACSSING ROAD         Rail Flope Soil Centrop         ASI Hawina K Abuquenca, MB 7105           443701         200         122         371         Project K.         ASI Flowing K.         ASI		Gallup R	efinery		Project Name	-				WWW	hallen	vironmental com	
AB301         Fold CL #         Project #           201         202         223         273         274         2023         203	RE301         Frequer #         Project #         Text	Malling Add	Iress:	BZ GIAN	VT CROSSING ROAD		Rail Pipe Soil C	leanup	4	901 Haw	kins N		buoueroue. NM 871	00
State         State <t< th=""><th>Sole         723         3711         Project (Manager.           doil         Levold / Full Vaication         Jannele Vestal         Jannele Vestal         Jannele Vestal           doil         Levold / Full Vaication         Jannele Vestal         Jannele Vestal         Jannele           doil         Levold / Full Vaication         Jannele Vestal         Jannele         Jannele           Time         Maint         Sample Request ID         Jannele         Sample Vestal         Jannele           Time         Maint         Sample Request ID         Containing         Presentine S7         No         Jannele           Time         Maint         Sample Request ID         Containing         Presentine S7         No         Jannele           1         Jannele         Solid         Vole         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannelee         Jannelee           1         Jannelee         Sol</th><th>Gallup NM</th><th>87301</th><th></th><th></th><th>Project #:</th><th></th><th></th><th></th><th>el. 505-</th><th>345-39</th><th></th><th>Fax 505-345-4107</th><th>1</th></t<>	Sole         723         3711         Project (Manager.           doil         Levold / Full Vaication         Jannele Vestal         Jannele Vestal         Jannele Vestal           doil         Levold / Full Vaication         Jannele Vestal         Jannele Vestal         Jannele           doil         Levold / Full Vaication         Jannele Vestal         Jannele         Jannele           Time         Maint         Sample Request ID         Jannele         Sample Vestal         Jannele           Time         Maint         Sample Request ID         Containing         Presentine S7         No         Jannele           Time         Maint         Sample Request ID         Containing         Presentine S7         No         Jannele           1         Jannele         Solid         Vole         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannele           1         Jannele         Solid         No         Jannele         Jannele         Jannelee         Jannelee           1         Jannelee         Sol	Gallup NM	87301			Project #:				el. 505-	345-39		Fax 505-345-4107	1
Balt         Stort         Bots         Control         Bots	State         Stot         B63         D600         Project Manager.           Dampe	Phone #:		505	722							Anal	vsis Request	
Identification           Identipereductification <th< td=""><td>and I level 4 (Full Valdonon)           And I level 4 (Full Valdonon)           Simple:           Time           Vision           Simple:           Simple:</td></th<> <td>email or Fa.</td> <td>.#X</td> <td>505</td> <td>863</td> <td>Project Mana</td> <td>ger:</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td>	and I level 4 (Full Valdonon)           And I level 4 (Full Valdonon)           Simple:           Time           Vision           Simple:	email or Fa.	.#X	505	863	Project Mana	ger:					-		
Three         Nample         Request ID         Container         X vec         No           Time         Main         Sample         Request ID         Container         X vec         No           Time         Main         Sample         Request ID         Container         Preenvative         HEU No         Sample         Request ID         Vectorative         HEU No         Sample         Reno         No         No         Sample         Reno         No         Sample         Reno         No         Sample         Reno<	Time         Nample         Request ID         Sample         Red	QA/QC Pack	age		E Level 4 (Full Validation)	Janelle Vest	tal		d			(OH		
Three         Althous         Container         Althous         Container         Simple Request 10         Container         Time         March Request 10         Container         Type         Type         Simple Request 10         Container         Type Simple Request 10         Container         Tote Simple Request 10         Container         Simple Request 10         Container         Tote S	Time         Katrix         Sample Request ID         Container         Xvoc         INo           Time         katrix         Sample Request ID         Time         Katrix         Sample Request ID         Container         Time         Katrix         Sample Request ID         Container         Type         Sample Request ID         Type         Sample Request ID         Container         Type         Sample Request ID         Sample Request ID         Container         Type         Sample Request ID         Type         Sample Request ID         Saminerer <td>D Other</td> <td></td> <td></td> <td></td> <td>Sampler:</td> <td></td> <td></td> <td>JT -</td> <td></td> <td></td> <td>N/O</td> <td></td> <td></td>	D Other				Sampler:			JT -			N/O		
Sample Timperatures %.           Time         Matrix         Sample Request ID         Container         Preservative         HEAL No.	Time         Matrix         Sample Request ID         Container         Freerwork         FEA No.         Time         Matrix         Sample Request ID         Type and #         Type         FEA No.         Time         Matrix         Sample Request ID         Type and #         Type         FEA No.         EACH         Matrix         Sample Request ID         Type and #         Type         FEA No.         EACH         Matrix         Sample Request ID         Type and #         Type         FEA No.         EACH         RCIA & Matrix         Freerwork         FEA No.         EACH         RCIA & Matrix         Freerwork         EACH         RCIA & Matrix         RCIA & Ma	T EDD (Ty	pe)			On Ice		O No	ST			-		
Time         Matrix         Sample Request ID         Container Type and #         Preservative Type         HEM No.         HEM No.	Time         Matrix         Sample Request ID         Container Type and #         Preservative Type         HEA No.         No.         HEA No.			-		Sample Tem	berature: S - Z		ATE		\$00	-	ĐUĐ	
Is 12:00         Solid         RBN 20011         2 - Boz         None         -OOI         X         <	Image: Solid         Target         2-Boz         None $-OOI         X$	Date	Time	Matrix		Container Type and #	Preservative Type	HEAL No. 1801/207	11111111	HA9 0128	8260B - VC	and the second second	Total Benze	
Is being by light by ligh	B         Solid         E(012)         E(0234)         2.902         None $-00.3$ N         X         N	11/5/2018			RBM 250511	2 - 9oz	None	100-			Ê.		×	
8         Gaine         Solid         Up 1009         2-902         None         -CO-4         N         X </td <td>a         2:000         2:022         None         -CO3         x</td> <td>11/5/2018</td> <td>-</td> <td></td> <td>EV8+2194</td> <td>¢ - 902</td> <td>None</td> <td>600-</td> <td></td> <td></td> <td>ri</td> <td>-</td> <td>×</td> <td></td>	a         2:000         2:022         None         -CO3         x	11/5/2018	-		EV8+2194	¢ - 902	None	600-			ri	-	×	
8         12:00 12:00 2:00         VB12034         2:002         None         -004         X         <	8         12:00         VB12034         2:92         None         -COU         X	11/5/2018			VB 16099	2 - 9nz	None	-003			-	1.1	×	
8         4:00         Solid         VB12119         2:922         None         -CO.S         N         X <td>8         4200         Solid         Variable         2:902         None         <math>-COS</math>         N         X         N         X         N&lt;</td> <td>11/5/2018</td> <td>4.1</td> <td>Solid</td> <td>VB12034</td> <td>2 - 9oz</td> <td>None</td> <td>-004</td> <td></td> <td></td> <td></td> <td></td> <td>×</td> <td></td>	8         4200         Solid         Variable         2:902         None $-COS$ N         X         N         X         N<	11/5/2018	4.1	Solid	VB12034	2 - 9oz	None	-004					×	
8         4300- 4200         Solid         VB12119         2-902         None         -COC         X <th< td=""><td>4306         Solid         VB12113         2 - 802         None         - 6.0.6         X         <thx< td=""><td>11/5/2018</td><td>12.00</td><td>-</td><td>012 12030</td><td>\$ - 9oz</td><td>None</td><td>-005</td><td></td><td></td><td></td><td></td><td>×</td><td></td></thx<></td></th<>	4306         Solid         VB12113         2 - 802         None         - 6.0.6         X <thx< td=""><td>11/5/2018</td><td>12.00</td><td>-</td><td>012 12030</td><td>\$ - 9oz</td><td>None</td><td>-005</td><td></td><td></td><td></td><td></td><td>×</td><td></td></thx<>	11/5/2018	12.00	-	012 12030	\$ - 9oz	None	-005					×	
8         +200 -201         Solid         VB12095         2-902         None         -001         X	8         4-2-05 4-2-05         Solid         VB12095         2-922         None         -CO7         X	11/5/2018	12:00-	_	VB12119	2 - 9oz	None	-606	-				×	
8         #2:00 #2:00         Solid         VB11004         # 2         902         None         -CO 8         N         X         N         X         N         N         X         N         <	8         1-506         Solid         VB11004         1-902         None         -COB         N         X         N         X         N <td>11/5/2018</td> <td>198.4</td> <td>_</td> <td>VB12095</td> <td>\$-90z</td> <td>None</td> <td>100-</td> <td></td> <td></td> <td></td> <td></td> <td>×</td> <td></td>	11/5/2018	198.4	_	VB12095	\$-90z	None	100-					×	
8         ½:00 2:00         Solid         VB1209         1         2         902         None         -COG         N         X         N         X         N         X         N         X         N </td <td>8         ½:06 2:01d         Solid         VB12209         ½:902         None         -COF         I         X         <th< td=""><td>11/5/2018</td><td>12:00</td><td></td><td>VB11004</td><td>\$ - 9oz</td><td>None</td><td>-00 8</td><td></td><td></td><td></td><td></td><td>×</td><td></td></th<></td>	8         ½:06 2:01d         Solid         VB12209         ½:902         None         -COF         I         X <th< td=""><td>11/5/2018</td><td>12:00</td><td></td><td>VB11004</td><td>\$ - 9oz</td><td>None</td><td>-00 8</td><td></td><td></td><td></td><td></td><td>×</td><td></td></th<>	11/5/2018	12:00		VB11004	\$ - 9oz	None	-00 8					×	
8         1.00         Solid         UB11128         2-902         None         -CI6         N         X         N         X         N <td>8         HEAD         Solid         UB11128         2-902         None         -C16         X<td>11/5/2018</td><td>100</td><td></td><td>VB12209</td><td>2 - 9oz</td><td>None</td><td>-009</td><td></td><td></td><td></td><td></td><td>×</td><td></td></td>	8         HEAD         Solid         UB11128         2-902         None         -C16         X <td>11/5/2018</td> <td>100</td> <td></td> <td>VB12209</td> <td>2 - 9oz</td> <td>None</td> <td>-009</td> <td></td> <td></td> <td></td> <td></td> <td>×</td> <td></td>	11/5/2018	100		VB12209	2 - 9oz	None	-009					×	
8         32.60         Solid         VB12059         2         902         None         -011         X	8         12.46         Solid         VB12053         2         902         None         -C11         X	11/5/2018	199.44		VB11128	2 - 90z	None	-010					×	
8         13:00 2:01d         Solid         VB12050         2:902         None         -C/3         X <t< td=""><td>8         H2000 H2005         Solid         WB12050         2-902         None         -C13         N         X         N         X         N         <t< td=""><td>11/5/2018</td><td>12:00</td><td></td><td>VB12059</td><td>2 9oz</td><td>None</td><td>110-</td><td></td><td></td><td></td><td></td><td>×</td><td></td></t<></td></t<>	8         H2000 H2005         Solid         WB12050         2-902         None         -C13         N         X         N         X         N <t< td=""><td>11/5/2018</td><td>12:00</td><td></td><td>VB12059</td><td>2 9oz</td><td>None</td><td>110-</td><td></td><td></td><td></td><td></td><td>×</td><td></td></t<>	11/5/2018	12:00		VB12059	2 9oz	None	110-					×	
8         42:00 - 2:00         Solid         LH2863         2:02         None         - C/3         N         X <t< td=""><td>8     42:00 12:00 201d     Solid     LH2863     2-902     None     -CUS     None     X       8     42:00 42:00 201d     VB12131     2-902     None     -CUS     X     X       8     42:00 42:00 2     Solid     VB12131     2-902     None     -CUS     X     X       11/06/18     VB12131     2-902     None     -CUS     X     X     X       11/06/18     VB12131     2-902     None     -CUS     X     X     X       11/06/18     VB121     2-902     None     -CUS     X     X     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     X     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     X     N       11/06/18     UL/06/18     None     -CUS     None     -CUS     N     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     N     X       11/10     UL/06/18     N     None     -CUS     N     N     N       11/11     UL/06/18     N     N     N     N     N       11/11     N     N     N     N     N     N</td><td>11/5/2018</td><td>12:00</td><td></td><td>VB12050</td><td>2-902</td><td>None</td><td>C10-</td><td></td><td></td><td></td><td></td><td>×</td><td></td></t<>	8     42:00 12:00 201d     Solid     LH2863     2-902     None     -CUS     None     X       8     42:00 42:00 201d     VB12131     2-902     None     -CUS     X     X       8     42:00 42:00 2     Solid     VB12131     2-902     None     -CUS     X     X       11/06/18     VB12131     2-902     None     -CUS     X     X     X       11/06/18     VB12131     2-902     None     -CUS     X     X     X       11/06/18     VB121     2-902     None     -CUS     X     X     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     X     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     X     N       11/06/18     UL/06/18     None     -CUS     None     -CUS     N     X       11/06/18     UL/06/18     None     -CUS     None     -CUS     N     X       11/10     UL/06/18     N     None     -CUS     N     N     N       11/11     UL/06/18     N     N     N     N     N       11/11     N     N     N     N     N     N	11/5/2018	12:00		VB12050	2-902	None	C10-					×	
8         12:00 Solid         Solid         VB12131         2-902         None         -014         x         x         x           8         12:00 Solid         vsvos7         2-902         None         -015         x         x         x           10         11/06/18         vsvos7         2-902         None         -015         x         x         x           11/06/18         None         -015         10         x         x         x         x           3:00pm         Relipingend by Landle Vegal         Received by Landle Vegal         Date Landle Science on One on One with         Date Landle Science on One on One with	8 13:00 Solid VB12131 2-902 None -014   X   X   X   X   X   X   X   X   X	11/5/2018	00-21		LH2863	2-90Z	None	-013			1		×	
8     42:00- IL/06/18     VBI/06/18     2-9uz     None     - CIS     X     X       DMD     IL/06/18     VBI/06/18     A     2-9uz     None     - CIS     X     X       B     IL/06/18     VBI/06/18     A     A     A     A     A       B     IL/06/18     VBI/06/18     A     A     A     A       B     IL/06/18     A     A<	8     42:00     Solid     VBY/05/18     2-9uz     None     - OIS     X     X       DMD     11/06/18     VBY/08     2-9uz     None     - OIS     X     X     X       Store     11/06/18     VBY/08     2-9uz     None     - OIS     X     X     X       Store     11/06/18     None     - OIS     None     - OIS     N     X     X       Store     0.01     100     100     100     100     N     N       Time     Reinguished by     X     Date     100     N     N	11/5/2018	12.00		VB12131	2-90Z	None	210-					×	
TAID 11/06/19 Beingeneradory Jacob Remarks: 3:00pm Reinerene on Cont with	TAID 11/06/19 S:00 Relignmented by	11/5/2018			VB11057	2 - 9az	None	-012			1		×	
3:00pm COLLAND Converses 1/2 1/2/1 / CLP Remarks.	3:00 Reliprovered by Januaria Vegal Received by Deter Time Remarks. Time Relinquaried by A Received by Date Time Remarks.		DHO	_	118									
3:00m CULLAND Con 1/04/1 Verie 20, Remarks.	3:00 Relinquashed by Level of Received by Los 10 100 Remarks. Time Relinquashed by Los Received by Date Time 20, Remarks.	- Hora										1		
	Time Reinquared by & Received by Date Time Date Date Date Date Date Date Date Dat	-	3:00pm	Keiner	3	Kerdanizoex	1/00	illes	Remark	AT.	Ber	00	and	



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

December 07, 2018

Janelle Vestal Marathon 92 Giant Crossing Rd Gallup, NM 87301 TEL: (505) 722-3833 FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1811D83

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/28/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report
Lab Order 1811D83

Date Reported: 12/7/2018

CLIENT: MarathonProject:Rail Pipe Soil CleanupLab ID:1811D83-001	Matrix: S	SOIL	Colle	ection I	<b>Date:</b> 11/	28/20	Excavated Soils #3 18 8:40:00 AM 18 3:56:00 PM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS						Analyst: Irm	
Diesel Range Organics (DRO)	9200	19	96		mg/Kg	10	12/4/2018 12:08:02 PM	41858
Motor Oil Range Organics (MRO)	2400	480	480		mg/Kg	10	12/4/2018 12:08:02 PM	41858
Surr: DNOP	0	0	50.6-138	S	%Rec	10	12/4/2018 12:08:02 PM	41858
MERCURY, TCLP							Analyst: pmf	
Mercury	ND	0.00050	0.020		mg/L	1	12/5/2018 2:09:43 PM	41854
EPA METHOD 6010B: TCLP METALS					-		Analyst: rde	
Arsenic	ND	0.029	5.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Barium	2.4	0.0011	100	J	mg/L	1	12/3/2018 5:48:58 PM	41835
Cadmium	ND	0.00090	1.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Chromium	ND	0.00070	5.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Lead	0.018	0.011	5.0	J	mg/L	1	12/3/2018 5:48:58 PM	41835
Selenium	ND	0.048	1.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Silver	0.013	0.00070	5.0	J	mg/L	1	12/3/2018 5:48:58 PM	41835
EPA METHOD 8260B: VOLATILES					-		Analyst: AG	
Benzene	ND	0.082	0.50	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Toluene	0.59	0.096	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Ethylbenzene	0.64	0.058	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Methyl tert-butyl ether (MTBE)	ND	0.24	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,4-Trimethylbenzene	8.5	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,3,5-Trimethylbenzene	2.2	0.097	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dichloroethane (EDC)	0.33	0.10	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dibromoethane (EDB)	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Naphthalene	26	0.20	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1-Methylnaphthalene	87	0.57	4.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Methylnaphthalene	99	0.44	4.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Acetone	1.9	0.83	15	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromobenzene	ND	0.096	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromodichloromethane	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromoform	ND	0.090	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromomethane	0.40	0.24	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Butanone	1.9	1.2	10	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Carbon disulfide	ND	0.33	10	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Carbon tetrachloride	ND	0.095	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chlorobenzene	ND	0.13	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloroethane	ND	0.15	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloroform	0.10	0.080	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloromethane	0.46	0.096	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Chlorotoluene	ND	0.087	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 11
- P Sample pH Not In RangeRL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1811D83

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 12/7/2018

CLIENT: Marathon Project: Rail Pipe Soil Cleanup		0.W	Colle	ection I	<b>Date:</b> 11/	28/20	Excavated Soils #3 18 8:40:00 AM	
Lab ID: 1811D83-001	Matrix: S	OIL	Rec	ceived I	<b>Date:</b> 11/	28/20	18 3:56:00 PM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
4-Chlorotoluene	ND	0.082	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
cis-1,2-DCE	ND	0.14	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
cis-1,3-Dichloropropene	ND	0.084	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dibromo-3-chloropropane	ND	0.10	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Dibromochloromethane	ND	0.071	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	
Dibromomethane	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	
1,2-Dichlorobenzene	ND	0.082	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,3-Dichlorobenzene	ND	0.087	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,4-Dichlorobenzene	ND	0.084	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Dichlorodifluoromethane	ND	0.23	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloroethane	ND	0.064	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloroethene	ND	0.40	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dichloropropane	ND	0.073	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	
1,3-Dichloropropane	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	
2,2-Dichloropropane	ND	0.33	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloropropene	ND	0.091	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Hexachlorobutadiene	ND	0.10	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Hexanone	0.88	0.17	10	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Isopropylbenzene	0.49	0.072	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
4-Isopropyltoluene	1.0	0.083	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
4-Methyl-2-pentanone	ND	0.19	10	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Methylene chloride	ND	0.18	3.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
n-Butylbenzene	1.9	0.093	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
n-Propylbenzene	1.1	0.080	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
sec-Butylbenzene	0.99	0.11	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Styrene	ND	0.078	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
tert-Butylbenzene	ND	0.094	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,1,2-Tetrachloroethane	ND	0.068	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,2,2-Tetrachloroethane	ND	0.10	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Tetrachloroethene (PCE)	ND	0.080	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
trans-1,2-DCE	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
trans-1,3-Dichloropropene	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,3-Trichlorobenzene	ND	0.088	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,4-Trichlorobenzene	ND	0.10	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,1-Trichloroethane	ND	0.090	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,2-Trichloroethane	ND	0.071	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Trichloroethene (TCE)	ND	0.12	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Trichlorofluoromethane	ND	0.34	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,3-Trichloropropane	ND	0.16	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

**Analytical Report** Lab Order 1811D83

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 12/7/2018

CLIENT: Marathon			Client	Sampl	e ID: Ra	il Pipe	e Excavated Soils #3	
<b>Project:</b> Rail Pipe Soil Cleanup			Coll	ection I	Date: 11/	/28/20	18 8:40:00 AM	
Lab ID: 1811D83-001	Matrix: S	OIL	Ree	ceived I	<b>Date:</b> 11/	/28/20	18 3:56:00 PM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	i
Vinyl chloride	ND	0.065	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	<i>I</i> 41803
Xylenes, Total	4.2	0.25	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	/ 41803
Surr: Dibromofluoromethane	93.8		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	/ 41803
Surr: 1,2-Dichloroethane-d4	97.9		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	/ 41803
Surr: Toluene-d8	101		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	/ 41803
Surr: 4-Bromofluorobenzene	91.0		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	/ 41803
EPA METHOD 8015D MOD: GASOLINE	RANGE						Analyst: AG	
Gasoline Range Organics (GRO)	200	24	100		mg/Kg	20	12/3/2018 2:29:28 PM	<i>I</i> 41803
Surr: BFB	95.8	0	70-130		%Rec	20	12/3/2018 2:29:28 PM	/ 41803

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 11
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Client: Project:	Marathon Rail Pipe	Soil Clear	up									
Sample ID	LCS-41858	SampT	ype: LC	S	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID:	LCSS	Batch	ID: <b>41</b>	858	R	aunNo: 5						
Prep Date:	12/3/2018	Analysis D	ate: 12	2/4/2018	S	SeqNo: 1	872032	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
-	Organics (DRO)	46	10	50.00	0	91.8	70	130				
Surr: DNOP		4.9		5.000		97.4	50.6	138				
Sample ID	MB-41858	SampT	ype: MB	BLK	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	e Organics		
Client ID:	PBS	Batch	ID: <b>41</b>	858	R	aunNo: 5	6060					
Prep Date:	12/3/2018	Analysis Date: 12/4/2018			S	SeqNo: 1	872034	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
-	Organics (DRO)	ND	10									
-	e Organics (MRO)	ND	50	40.00		405	50.0	400				
Surr: DNOP		10		10.00		105	50.6	138				
Sample ID	LCS-41902	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics		
Client ID:	LCSS	Batch	ID: <b>41</b>	902	R	RunNo: 5						
Prep Date:	12/5/2018	Analysis D	ate: 12	2/5/2018	SeqNo: 1873284 Units: %Rec							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP		4.6		5.000		92.7	50.6	138				
Sample ID	MB-41902	SampT	ype: MB	BLK	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	e Organics		
Client ID:	PBS	Batch	ID: <b>41</b>	902	R	anNo: 5						
Prep Date:	12/5/2018	Analysis D	ate: 12	2/5/2018	S	SeqNo: 1	873285	Units: %Rec	;			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP		10		10.00		102	50.6	138				
Sample ID	1812156-007AMS	SampT	ype: <b>M</b> \$	S	Tes	tCode: El	PA Method	8015M/D: Die	sel Rang	e Organics		
Client ID:	BatchQC	•	ID: 41			unNo: 5			Ū	-		
Prep Date:	12/5/2018	Analysis D	ate: 12	2/5/2018	S	SeqNo: 1	874390	Units: %Rec	;			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP		5.1		4.907		103	50.6	138		-		
Sample ID	1812156-007AMSI	) SampT	ype: <b>M</b> \$	SD	Tes	tCode: FI	PA Method	8015M/D: Die	sel Rang	organics		
Client ID:	BatchQC	•	D: 41			lunNo: 5			.con nung	2 Si guinos		
								Units: %Rec				
Prep Date:	12/5/2018	Analysis D	ate: 12	2/5/2018	3	SeqNo: 1	0/4391					
Prep Date: Analyte	12/5/2018	Analysis D Result	ate: 12 PQL		SPK Ref Val	%REC	LowLimit	HighLimit	, %RPD	RPDLimit	Qual	

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded Η

Not Detected at the Reporting Limit ND

- Practical Quanitative Limit PQL
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified W

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WO#: 1811D83 07-Dec-18

## Client:

Project: Rail Pipe Soil Cleanup

Marathon

Sample ID 1811d77-001ams	SampT	ype: <b>M</b> \$	5	Tes	TestCode: EPA Method 8260B: Volatiles					
Client ID: BatchQC	Batch	ID: <b>41</b>	803	F	RunNo: 5	6018				
Prep Date: 11/29/2018	Analysis D	ate: 11	1/30/2018	S	SeqNo: 1869941			(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0.01395	102	68.9	131			
Toluene	1.0	0.050	1.000	0.01040	100	64.3	137			
Chlorobenzene	1.0	0.050	1.000	0	102	65.9	143			
1,1-Dichloroethene	1.1	0.050	1.000	0	114	53.4	150			
Trichloroethene (TCE)	0.98	0.050	1.000	0	98.3	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.0	70	130			
Surr: Toluene-d8	0.48		0.5000		96.1	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.5	70	130			
Sample ID 1811d77-001amsc	SampT	ype: <b>M</b> \$	SD	Tes	tCode: E	PA Method	8260B: Vola	tiles		
Client ID: BatchQC	ent ID: BatchQC Batch ID: 41803				RunNo: 56018					
Prep Date: 11/29/2018	Analysis D	ate: 11	1/30/2018	S	SeqNo: 1	869942	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0.01395	110	68.9	131	7.55	20	
Toluene	1.0	0.050	1.000	0.01040	99.2	64.3	137	0.949	20	
Chlorobenzene	1.0	0.050	1.000	0	102	65.9	143	0.318	20	
1,1-Dichloroethene	1.2	0.050	1.000	0	122	53.4	150	7.08	20	
Trichloroethene (TCE)	1.1	0.050	1.000	0	106	70	130	7.17	20	
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130	0	0	
Surr: Toluene-d8	0.46		0.5000		92.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.8	70	130	0	0	
Sample ID Ics-41803	SampT	ype: LC	s	TestCode: EPA Method 8260B: Volatiles						
Client ID: LCSS	Batch	ID: <b>41</b>	803	F	RunNo: 5	6018				
Prep Date: 11/29/2018	Analysis D	ate: 11	1/30/2018	5	SeqNo: 1	869949	Units: <b>mg/k</b>	(g		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.98	0.050	1.000	0	97.5	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	105	50.8	164			
Trichloroethene (TCE)	0.96	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.5	70	130			
Surr: Toluene-d8	0.47		0.5000		93.9	70	130			
			0.5000		98.0	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- Sample pH Not In Range
- RL Reporting Detection Limit

Р

W Sample container temperature is out of limit as specified

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WO#: 1811D83 07-Dec-18

Client: Ma Project: Rai

Marathon Rail Pipe Soil Cleanup

Sample ID mb-41803	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles						
Client ID: PBS	Batch ID: 41803	RunNo: 56018						
Prep Date: 11/29/2018	Analysis Date: 11/30/2018	SeqNo: 1869950	Units: <b>mg/Kg</b>					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual				
Benzene	ND 0.025							
oluene	ND 0.050							
Ethylbenzene	ND 0.050							
Nethyl tert-butyl ether (MTBE)	ND 0.050							
,2,4-Trimethylbenzene	ND 0.050							
,3,5-Trimethylbenzene	ND 0.050							
,2-Dichloroethane (EDC)	ND 0.050							
,2-Dibromoethane (EDB)	ND 0.050							
laphthalene	ND 0.10							
-Methylnaphthalene	ND 0.20							
2-Methylnaphthalene	ND 0.20							
Acetone	ND 0.75							
Bromobenzene	ND 0.050							
Bromodichloromethane	ND 0.050							
Bromoform	ND 0.050							
Bromomethane	ND 0.15							
2-Butanone	ND 0.50							
Carbon disulfide	ND 0.50							
Carbon tetrachloride	ND 0.050							
Chlorobenzene	ND 0.050							
Chloroethane	ND 0.10							
Chloroform	ND 0.050							
Chloromethane	ND 0.15							
2-Chlorotoluene	ND 0.050							
-Chlorotoluene	ND 0.050							
sis-1,2-DCE	ND 0.050							
sis-1,3-Dichloropropene	ND 0.050							
,2-Dibromo-3-chloropropane	ND 0.10							
Dibromochloromethane	ND 0.050							
Dibromomethane	ND 0.050							
,2-Dichlorobenzene	ND 0.050							
,3-Dichlorobenzene	ND 0.050							
,4-Dichlorobenzene	ND 0.050							
Dichlorodifluoromethane	ND 0.050							
,1-Dichloroethane	ND 0.050							
,1-Dichloroethene	ND 0.050							
,2-Dichloropropane	ND 0.050							
,3-Dichloropropane	ND 0.050							
2,2-Dichloropropane	ND 0.10							

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 6 of 11

WO#: 1811D83 07-Dec-18

Client:

Marathon

Project: Rail P	ipe Soil Clear	nup									
Sample ID mb-41803	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: Volat	iles			
Client ID: PBS	Batch	n ID: 418	B03	F	RunNo: 56018						
Prep Date: 11/29/2018	Analysis D	Date: 11	/30/2018	S	SeqNo: 1	869950	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,1-Dichloropropene	ND	0.10									
Hexachlorobutadiene	ND	0.10									
2-Hexanone	ND	0.50									
Isopropylbenzene	ND	0.050									
4-Isopropyltoluene	ND	0.050									
4-Methyl-2-pentanone	ND	0.50									
Methylene chloride	ND	0.15									
n-Butylbenzene	ND	0.15									
n-Propylbenzene	ND	0.050									
sec-Butylbenzene	ND	0.050									
Styrene	ND	0.050									
tert-Butylbenzene	ND	0.050									
1,1,1,2-Tetrachloroethane	ND	0.050									
1,1,2,2-Tetrachloroethane	ND	0.050									
Tetrachloroethene (PCE)	ND	0.050									
trans-1,2-DCE	ND	0.050									
trans-1,3-Dichloropropene	ND	0.050									
1,2,3-Trichlorobenzene	ND	0.10									
1,2,4-Trichlorobenzene	ND	0.050									
1,1,1-Trichloroethane	ND	0.050									
1,1,2-Trichloroethane	ND	0.050									
Trichloroethene (TCE)	ND	0.050									
Trichlorofluoromethane	ND	0.050									
1,2,3-Trichloropropane	ND	0.10									
Vinyl chloride	ND	0.050									
Xylenes, Total	ND	0.10									
Surr: Dibromofluoromethane	0.49		0.5000		98.7	70	130				
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130				
Surr: Toluene-d8	0.48		0.5000		96.0	70	130				
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.5	70	130				

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#:	1811D83
	07-Dec-18

Client:	Marathon	l									
Project:	Rail Pipe	Soil Clear	nup								
Sample ID	MB-41854	SampT	ype: ME	BLK	Test	tCode: M	ERCURY, T	CLP			
Client ID:	PBW	Batch	h ID: 41	854	RunNo: <b>56100</b>						
Prep Date:	12/3/2018	Analysis Date: 12/5/2018			S	eqNo: 1	873667	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.020								
Sample ID	LCS-41854 SampType: LCS				Test	tCode: M	ERCURY, T	CLP			
Client ID:	LCSW Batch ID: 41854				R	unNo: 5	6100				
Prep Date:	12/3/2018	2018 Analysis Date: 12/5/2018				SeqNo: <b>1873668</b> Ur					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050	0.020	0.005000	0	99.3	80	120			J
Sample ID	1811D78-001AMS	CompT	ype: MS	2	Test	ERCURY, T					
		Sampi	ype. wis	5							
Client ID:	BatchQC	•	h ID: 41			unNo: 5		ULI			
	BatchQC	•	h ID: 41	854	R		6100	Units: mg/L			
Client ID:	BatchQC	Batch	h ID: 41	854 2/5/2018	R	tunNo: <b>5</b> GeqNo: <b>1</b>	6100		%RPD	RPDLimit	Qual
Client ID: Prep Date:	BatchQC	Batcl Analysis D	h ID: 41 Date: 12	854 2/5/2018	R	tunNo: <b>5</b> SeqNo: <b>1</b>	6100 873680	Units: <b>mg/L</b>	%RPD	RPDLimit	Qual J
Client ID: Prep Date: Analyte Mercury	BatchQC	Batcl Analysis D Result 0.0050	h ID: 41 Date: 12 PQL	854 2/5/2018 SPK value 0.005000	R S SPK Ref Val 0	2unNo: <b>5</b> 5eqNo: <b>1</b> %REC 100	6100 873680 LowLimit	Units: <b>mg/L</b> HighLimit 125	%RPD	RPDLimit	
Client ID: Prep Date: Analyte Mercury	BatchQC 12/3/2018	Batch Analysis D Result 0.0050 D SampT	h ID: 41 Date: 12 PQL 0.020	854 2/5/2018 SPK value 0.005000	R S SPK Ref Val 0 Test	2unNo: <b>5</b> 5eqNo: <b>1</b> %REC 100	6100 873680 LowLimit 75 ERCURY, T	Units: <b>mg/L</b> HighLimit 125	%RPD	RPDLimit	
Client ID: Prep Date: Analyte Mercury Sample ID	BatchQC 12/3/2018 1811D78-001AMSB BatchQC	Batch Analysis D Result 0.0050 D SampT	h ID: 41 Date: 12 PQL 0.020 Type: MS h ID: 41	854 2/5/2018 SPK value 0.005000 SD 854	R SPK Ref Val 0 Test R	eunNo: <b>5</b> eqNo: <b>1</b> <u>%REC</u> 100 Code: <b>M</b>	6100 873680 LowLimit 75 ERCURY, T 6100	Units: <b>mg/L</b> HighLimit 125	%RPD	RPDLimit	
Client ID: Prep Date: Analyte Mercury Sample ID Client ID:	BatchQC 12/3/2018 1811D78-001AMSB BatchQC	Batcl Analysis D Result 0.0050 D SampT Batcl	h ID: 41 Date: 12 PQL 0.020 Type: MS h ID: 41	854 2/5/2018 SPK value 0.005000 SD 854 2/5/2018	R SPK Ref Val 0 Test R	eunNo: 5 SeqNo: 1 %REC 100 Code: M Code: M CunNo: 5 SeqNo: 1	6100 873680 LowLimit 75 ERCURY, T 6100	Units: mg/L HighLimit 125	%RPD	RPDLimit	

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1811D83 07-Dec-18

Client: Project:	Marathon Rail Pipe	Soil Clear	nup									
Sample ID	MB-41835	SampT	ype: MI	BLK	Tes	TestCode: EPA Method 6010B: TCLP Metals						
Client ID:	PBW	Batch	h ID: <b>41</b>	835	R	RunNo: 5	6054					
Prep Date:	11/30/2018	Analysis D	Date: 12	2/3/2018	S	SeqNo: 1	871904	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		ND	5.0									
Barium		ND	100									
Cadmium		ND	1.0									
Chromium		ND	5.0									
Lead		ND	5.0									
Selenium		ND	1.0									
Silver		ND	5.0									
Sample ID	LCS-41835	SampT	ype: LC	S	Tes	tCode: El	PA Method	6010B: TCLP	• Metals			
Client ID:	LCSW	Batch ID: 41835			R	RunNo: 5	6054					
Prep Date:	11/30/2018	Analysis Date: 12/3/2018			S	SeqNo: 1	871906	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		0.50	5.0	0.5000	0	99.7	80	120			J	
Barium		0.47	100	0.5000	0	93.0	80	120			J	
Cadmium		0.48	1.0	0.5000	0	97.0	80	120			J	
Chromium		0.47	5.0	0.5000	0	93.9	80	120			J	
_ead		0.46	5.0	0.5000	0	92.5	80	120			J	
Selenium		0.52	1.0	0.5000	0	104	80	120			J	
Silver		0.10	5.0	0.1000	0	102	80	120			J	
Sample ID	1811D78-002AMS	SampT	ype: MS	S	Tes	tCode: El	PA Method	6010B: TCLP	9 Metals			
Client ID:	BatchQC	Batch	h ID: 41	835	RunNo: <b>56054</b>							
Prep Date:	11/30/2018	Analysis D	Date: 12	2/3/2018	SeqNo: 1871913			Units: mg/L				
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		0.50	5.0	0.5000	0	99.2	75	125			J	
Barium		1.8	100	0.5000	1.396	88.5	75	125			J	
Cadmium		0.48	1.0	0.5000	0	96.3	75	125			J	
Chromium		0.45	5.0	0.5000	0	89.1	75	125			J	
_ead		0.44	5.0	0.5000	0	88.7	75	125			J	
Selenium		0.51	1.0	0.5000	0	102	75	125			J	
Silver		0.12	5.0	0.1000	0.01417	106	75	125			J	
Sample ID	1811D78-002AMS	D SampT	уре: М	SD	Tes	tCode: El	PA Method	6010B: TCLP	Metals			
	BatchQC	Batcl	h ID: <b>41</b>	835	R	RunNo: 5	6054					
Client ID:	Datenige							11.11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.				
Client ID: Prep Date:		Analysis D	Date: 12	2/3/2018	S	SeqNo: 1	871916	Units: mg/L				
			Date: 12 PQL		S SPK Ref Val		871916 LowLimit	HighLimit	%RPD	RPDLimit	Qual	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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WO#: 1811D83 07-Dec-18

# Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID 1811D78-002AMS	D SampT	ype: <b>MS</b>	SD.	TestCode: EPA Method 6010B: TCLP Metals						
Client ID: BatchQC	Batch	n ID: 41	835	F	RunNo: <b>56054</b>					
Prep Date: 11/30/2018	Analysis D	ate: 12	2/3/2018	S	SeqNo: 1	871916	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.9	100	0.5000	1.396	99.5	75	125	2.95	20	J
Cadmium	0.50	1.0	0.5000	0	99.5	75	125	3.32	20	J
Chromium	0.46	5.0	0.5000	0	92.5	75	125	3.78	20	J
Lead	0.46	5.0	0.5000	0	92.4	75	125	4.06	20	J
Selenium	0.51	1.0	0.5000	0	102	75	125	0.171	20	J
Silver	0.12	5.0	0.1000	0.01417	110	75	125	3.21	20	J

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 10 of 11

Client: Marather Project: Rail Pip	on pe Soil Clear	nup								
Sample ID mb-41803	ample ID mb-41803 SampType: MBLK					PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	<b>S</b> Batch ID: <b>41803</b>		RunNo: 56018							
Prep Date: 11/29/2018	Analysis D	Date: 1	1/30/2018	S	SeqNo: 1	869992	Units: <b>mg/ł</b>	٨g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			
Sample ID Ics-41803	SampT	Type: LC	s	TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch	h ID: <b>41</b>	803	RunNo: 56018						
Prep Date: 11/29/2018	Analysis D	Date: 1	1/30/2018	S	SeqNo: 1	870018	Units: mg/ł	۲g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	111	70	130			
Surr: BFB	520		500.0		104	70	130			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
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- P Sample pH Not In Range
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- W Sample container temperature is out of limit as specified

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HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Analysis Labor 4901 Hawkin Albuquerque, NM 8 TEL: 505-345-3975 FAX: 505-345- Website: www.hallenvironmenta	ns NE 87109 San 4107	Sample Log-In Check List							
Client Name: MARATHON GALLUP W	ork Order Number: 1811D83		RcptNo: 1							
Received By: Isaiah Ortiz 11/2	8/2018 3:56:00 PM	IG								
Completed By: Isaiah Ortiz 11/2 Reviewed By: DAD II/29//8	8/2018 4:41:16 PM	IGh								
CB: ENM 11/29/18	_									
Chain of Custody	_									
1. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present							
2. How was the sample delivered?	<u>Client</u>									
Log In	Yes 🗸	No 🗆								
3. Was an attempt made to cool the samples?	tes 💌									
4. Were all samples received at a temperature of >0°	°C to 6.0°C Yes ✔	No 🗌								
5. Sample(s) in proper container(s)?	Yes 🔽	No 🗌								
6. Sufficient sample volume for indicated test(s)?	Yes 🗸	No 🗌								
$\boldsymbol{7}_{\text{.}}$ Are samples (except VOA and ONG) properly press	erved? Yes 🗹	No 🗌								
8. Was preservative added to bottles?	Yes	No 🗹	NA							
9. VOA vials have zero headspace?	Yes	No 🗌	No VOA Vials 🗹							
10. Were any sample containers received broken?	Yes	No 🗹	# of preserved							
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🔽	No 🗆	bottles checked for pH: (≼2 %r >12 unless noted							
12. Are matrices correctly identified on Chain of Custod	ly? Yes 🗹	No 🗆	Adjusted R							
13. Is it clear what analyses were requested?	Yes 🗹	No 🗌	r NP1							
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	Νο	Checked by:							
Special Handling (if applicable)										
15. Was client notified of all discrepancies with this ord	ler? Yes 🗌	No 🗌	NA 🗹							
Person Notified:	Date:									
By Whom:	······································	hone 🗌 Fax	In Person							
Regarding:										
Client Instructions:										
16. Additional remarks:										
17. <u>Cooler Information</u>										
Cooler No Temp °C Condition Seal Inta	ct Seal No Seal Date	Signed By								

Chain-of-Custody Record     Turn-Around Time:       mt:     Marathon     Implement       callup Refinery     Callup Refinery     Project Name:       Callup Refinery     Project Name:     Rail Pipe Soil C       Ing Address:     22 GIANT CROSSING ROAD     Project Manager:       Ing Address:     505     722     3721       Ing Fax#:     505     863     0930       Difter     Level 4 (Full Validation)     Janelie Vestal       Difter     Difter     Sampler:       Difter     Difter     Difter       Difter     Difter     Difter       Difter     Sampler:     Difter       Difter     Difter       Difter										(	N JC	) )	Air Bubbles			i 							Ë.		-	]		
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Narathon     Turn-Around Time:       Marathon     Sample       Marathon     Sample       Marathon     Sample       Service     Rail Pipe Soil Cleanup       Marathon     Service       Mark     Service       Matix     Sample       Mark     Service																1	-											
Narathon     Turn-Around Time:       Marathon     Sample       Marathon     Sample       Marathon     Sample       Service     Rail Pipe Soil Cleanup       Marathon     Service       Mark     Service       Matix     Sample       Mark     Service			5	7109	202	-												-								If necessary samples submitted for Hall Environmental may be submotivated to other according laborations. This series as online of this morehalty. Any sub-motivated on the analysis more		
Narathon     Turn-Around Time:       Marathon     Sample       Marathon     Sample       Marathon     Sample       Service     Rail Pipe Soil Cleanup       Marathon     Service       Mark     Service       Matix     Sample       Mark     Service				NN N	-410	1																				1000		
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Narathon     Turn-Around Time:       Marathon     Sample       Marathon     Sample       Marathon     Sample       Service     Rail Pipe Soil Cleanup       Marathon     Service       Mark     Service       Matix     Sample       Mark     Service		<u>Z</u>		duero	17 50	is Re		-										-										
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