GW - 028

C-141s (2)

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Thursday, April 07, 2016 10:01 PM
То:	Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc:	Denton, Scott; Orosco, Richard
Subject:	2016-04-04 Asphalt spill at Artesia
Attachments:	2016-04-04 Initial C-141 Asphalt spill.pdf

Carl and Leona,

Please see the attached initial C-141 report form corresponding to an asphalt spill that occurred on April 4, 2016. As mentioned in the report, the cleanup is underway and a final C-141 form will follow with all supporting documentation.

If you have any questions or would like to discuss, please let me know.

Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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SUSANA MARTINEZ Governor JOHN A. SANCHEZ Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.env.nm.gov



RYAN FLYNN Cabinet Secretary BUTCH TONGATE Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 8, 2016

Mr. Scott M. Denton Environmental Manager HollyFrontier Navajo Refining, LLC P.O. Box 159 Artesia, New Mexico 88211-0159

RE: RESPONSE TANK 815 RELEASE RESPONSE REPORT, JANUARY 2016 HOLLYFRONTIER NAVAJO REFINING, LLC - ARTESIA REFINERY EPA ID# NMD048918817 HWB-NRC-MISC

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received HollyFrontier Navajo Refining, LLC - Artesia Refinery's (the Permittee) *Tank 815 Release Response Report* (Report), dated January 28, 2016. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. The Permittee requested a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste; however, NMED reviewed the Permittee's request and determined that the excavated soil was a hazardous waste and denied the Permittee's request for a "no longer contained-in" determination because it did not meet applicable Land Disposal

Mr. Denton April 8, 2016 Page 2 of 3

Restrictions (LDR) standards. On January 29, 2016, NMED received the Permittee's Report. NMED considers the Report to be incomplete and provides the following comments:

Comment 1

In the *Remedial Actions* section, page 2 of the Report, the Permittee describes the saturated soil removal activities. Excavated soil was placed in three roll-off bins and soil from each bin was characterized for disposal. After the excavation activities were completed, the area was backfilled and graded with soil from an off-site source. It is important to note that this release occurred in a HWMU and is therefore subject to the requirements of the December 2010 Post-Closure Care Permit. Revise the Report to include the following information:

- a. Explain in the Report what caused the sump to overflow and the steps taken to prevent future releases at the sump.
- b. The Report stated that 12 inches of soil was removed from the release area, but it was not clear if the soil was saturated to a depth of 12 inches. Provide the depth of saturation and, if the depth of saturation was greater than 12 inches, explain why only 12 inches was removed from the release area.
- c. Explain why soil confirmation samples were not collected in the release area and how it was determined that the extent of contamination was defined.
- d. Provide dimensions of the release area and the volume of contaminated soil removed from excavation activities.

Comment 2

As stated in Comment 1c, the Permittee did not collect soil confirmation samples at Tank 815 located in the NCL; therefore, the Permittee has not demonstrated that all soils containing DRO at concentrations greater than the soil screening level (SSL) were removed. The Permittee must collect at least four confirmation samples from the soils at the new fill/soil interface in the release area and analyze the samples for DRO (and SVOCs if DRO is greater than 3,000 mg/kg [Industrial/Occupational Exposure for Diesel#2/crankcase oil from December 2014 *Risk Assessment Guidance for Investigations and Remediation*]). Provide the analytical data with the revised Report by **June 17, 2016**. In addition, during a phone call between NMED and the Permittee on April 4, 2016, the Permittee expressed concerns about coming in contact with or removing the waste beneath the secondary containment cover of the NCL during soil confirmation sampling. At this time, if waste is encountered during soil confirmation sampling activities, the Permittee must segregate the clean fill from the underlying waste. The waste and contaminated cover material can be characterized separately for appropriate disposal. For future removal activities involving the NCL, the Permittee must contact NMED so that appropriate measures can be discussed prior to beginning work at the site.

Mr. Denton April 8, 2016 Page 3 of 3

The Permittee must address all comments and submit the revised Report with the confirmation sample analytical data results from the soil confirmation samples to NMED by **June 17, 2016**.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely, John E. Kieling Chief

Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
R. Combs, HollyFrontier Navajo Refining, LLC - Artesia Refinery
P. Kruger, AMEC Foster Wheeler
L. King, EPA 6PD-N

File: Reading and NRC 2016, HWB-NRC-MISC



January 28, 2016

Mr. Carl Chavez New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Mr. John Kieling Chief, Hazardous Waste Bureau New Mexico Environmental Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505

RE: Final Release Report for April 2015 Tank 815 Release HollyFrontier Navajo, L.L.C., Artesia Refinery Discharge Permit GW-028; RCRA Permit No. NMD048918817

Dear Mr. Chavez and Mr. Kieling:

Enclosed is the final C-141 form and the *Tank 815 Release Response Report* for the April 16, 2015 release. The release response report documents the actions taken immediately following the release as well as the remediation and waste disposal activities. This release report is being submitted in both hard copy and electronic format.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C.

c: Robert Combs

HollyFrontier Navajo Refining LLC 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u>



January 28, 2016

Mr. Scott Denton Dr. Robert Combs HollyFrontier Navajo Refining LLC 501 East Main Street Artesia, New Mexico 88210

Tank 815 Release Response Report

Dear Scott and Robert:

Amec Foster Wheeler has prepared this release response report to describe activities that have occurred to address a reported release of diesel from the Tank 815 water draw sump at the Navajo Refining Company, LLC (NRC) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the April 16, 2015 release.

Release

On April 16, 2015, an overflow of a water and diesel mixture from the water draw sump at Tank 815 was observed. The water draw valve was immediately closed upon discovery of the overflow, and a vacuum truck was used to recover free liquids from the area. Approximately 30 barrels of free liquid was recovered from the release area and the sump and was returned to the crude process. The exact volume of liquids released from the sump is unknown, but was reported as greater than 25 barrels based on the volume of liquid recovered.

Notification

Sections 1.5.13, 3.2.3.a.g, and 4.7.4 of the Post-Closure Care Permit (PCC Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) require notification of a release. Section 1.5.13 requires verbal notification within 24 hours in the event that a release may endanger public drinking water supplies or could threaten the environment or human health outside the refinery, and requires written notification within five calendar days. Section 3.2.3.a.g specifically requires notification within 24 hours of a release from Tank 815. Section 4.7.4 requires notification of a new release from an existing solid waste management unit (SWMU) be reported within 15 days. Tank 815 is located within the North Colony Landfarm (NCL) which is listed as SWMU 6 in the PCC Permit (Figure 2).

Section 2.D.1 of the Discharge Permit GW-028 issued by the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) for the refinery requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.



NRC personnel verbally reported the release to the NMED HWB and the OCD on April 16, 2015. Written notification was provided to both agencies on April 21, 2015 using an initial C-141 report. A copy of the initial C-141 report is provided in Attachment A. Thus, the initial reporting requirements of both the PCC Permit and the Discharge Permit have been met.

Remedial Actions

In order to maintain appropriate cover for the NCL, the saturated soil in the vicinity of the release was excavated and was placed into three covered, lined rolloff containers. Soil was excavated to a depth of no more than 12 inches below the ground surface. Once the excavation was completed, the area was backfilled with clean soil from an off-site source and graded to match the surrounding area. Figure 3 shows the extent of the affected area and photographs from before and after the excavation was performed are provided in Attachment B.

Waste Characterization and Disposal

One representative composite sample of the excavated soil was collected from each of the rolloff containers and analyzed for constituents of concern. The analytical results from each of the three samples were compared to the concentrations used to define a waste as characteristically hazardous under the Toxicity Characteristic. The analytical results were also compared to the land disposal restriction treatment standards for the listed wastes that were historically treated within the NCL and to the alternative standards for soils containing those listed wastes. Table 1 provides the waste characterization analytical results and the standards used for these comparisons.

NRC requested an extension from NMED HWB for the 90-day storage period for the soils placed in the rolloffs on July 15, 2015. At that time, the characterization of the soils was still being evaluated and the soil was considered potentially a hazardous waste. NMED HWB granted a one-time 30-day extension, dated July 16, 2015, for the stored soils while the characterization was evaluated. Copies of the letters are provided in Attachment C.

On July 23, 2015, NRC submitted a letter to the NMED HWB stating that the excavated soil would be disposed of at an authorized Resource Conservation and Recovery Act (RCRA) Subtitle C treatment, storage, and disposal facility (TSDF) as a conservative measure. However, because the samples indicated that the soil is not characteristically hazardous and all of the sample concentrations were below the land disposal restrictions for soils, NRC requested that the soils in the rolloffs be designated as non-hazardous under a "no longer contained-in" determination. The NMED HWB denied the request in a response letter dated August 4, 2015. Copies of the letters are provided in Attachment C.

The three rolloffs of excavated soil were transported to U.S. Ecology, Inc. in Robstown, Texas on August 14, 2015. A copy of the completed hazardous waste manifests documenting the disposal of the excavated soils as hazardous waste are provided in Attachment D.



Conclusion

The remedial response to the April 16, 2015 release of a water and diesel mixture from the water draw sump for Tank 815 has been completed. Saturated soil was excavated from the release area and disposed of off-site at an approved TSDF. The excavated area was backfilled with clean soil and graded to match the surrounding areas of the NCL. No further remedial actions are recommended at this time. A final C-141 report has been prepared and included as Attachment E to this letter.

Should you have any questions or comments, please feel free to contact me at 713.929.5674.

Sincerely,

200

Pamela R. Krueger Senior Associate

Enclosures: Table Figures Attachment A: Initial C-141 Attachment B: Photographs Attachment C: Correspondence Attachment D: Waste Manifests Attachment E: Final C-141



Tables

Table 1 - Waste Soil Characterization Analytical Results

Tank 815 Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit	Hazardo	us Waste Treat	ment Standard	s (mg/kg)	Alternative Treatment Standards for Soils (mg/kg)				Analytical Results			
	(mg/L)	K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49	
Semivolatile Organic Compound	ds (mg/kg)		-	-	-	-	-		-				
2,4-Dimethylphenol			NA		NA		NA		NA	<18.5	<3.81	<38.1	
Acenaphthene				NA				NA		1.25 J	0.168 J	0.845 J	
Anthracene			3.4	3.4			34	34		0.552 J	0.262 J	1.35 J	
Benz(a)anthracene				3.4	3.4			34	34	0.246 J	0.634	2.63 J	
Benzo(a)pyrene		3.4	3.4	3.4		34	34	34		<1.83	0.488 J	2.13 J	
bis(2-Ethylhexyl) phthalate		28	28	28		280	280	280		<18.5	<3.81	<38.1	
Carbon disulfide			NA				NA			not analyzed	not analyzed	not analyzed	
Chrysene		3.4	3.4	3.4		34	34	34		0.395 J	0.662	6.86	
Di-n-butyl phthalate		28		28		280		280		<18.5	<3.81	<38.1	
Fluorene		NA		NA		NA		NA		2.2	0.290 J	0.994 J	
m-Cresol (3-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
Naphthalene		5.6	5.6	5.6	5.6	56	56	56	56	2.03	0.160 J	<3.77	
o-Cresol (2-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
p-Cresol (4-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
Phenanthrene		5.6	5.6	5.6	5.6	56	56	56	56	0.996 J	0.896	3.87	
Phenol		6.2	6.2	6.2	6.2	62	62	62	62	<18.5	<3.81	<38.1	
Pyrene		8.2	8.2	8.2		82	82	82		1.82 J	1.59	10.4	
TCLP Volatile Organic Compou	inds (mg/L)								•				
1,1-Dichloroethene	0.7									< 0.050	< 0.050	< 0.050	
1,2-Dichloroethane	0.5									< 0.050	< 0.050	< 0.050	
2-Butanone	200									< 0.50	< 0.50	< 0.50	
Benzene	0.5									< 0.050	< 0.050	< 0.050	
Carbon tetrachloride	0.5									< 0.050	< 0.050	< 0.050	
Chlorobenzene	100									< 0.050	< 0.050	< 0.050	
Chloroform	б									< 0.25	< 0.25	< 0.25	
Tetrachloroethene	0.7									< 0.050	< 0.050	< 0.050	
Trichloroethene	0.5									< 0.050	< 0.050	< 0.050	
Vinyl Chloride	0.2									< 0.050	< 0.050	< 0.050	
TCLP Semivolatile Organic Cor	npounds (mg/L)				Į			4			L		
1,4-Dichlorobenzene	7.5									< 0.10	< 0.10	< 0.10	
2,4,5-Trichlorophenol	400									<0.10	<0.10	<0.10	
2,4,6-Trichlorophenol	2									<0.10	<0.10	<0.10	
2,4-Dinitrotoluene	0.13									<0.10	<0.10	<0.10	
Cresols, Total	200									<0.20	<0.20	<0.20	
Hexachlorobenzene	0.13									<0.10	<0.10	<0.10	
Hexachlorobutadiene	0.5									<0.10	<0.10	<0.10	
Hexachloroethane	3									<0.10	<0.10	<0.10	
Nitrobenzene	2									<0.10	<0.10	<0.10	
Pentachlorophenol	100									<0.10	<0.10	<0.10	
Pyridine	5									<0.10	<0.10	<0.10	

Table 1 - Waste Soil Characterization Analytical Results

Tank 815 Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit	Hazardo	us Waste Treat	ment Standard	s (mg/kg)	Alternativ	Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
	(mg/L)	K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49	
TCLP Metals (mg/L)													
Arsenic	5									< 0.450	< 0.450	< 0.450	
Barium	100									<1.40	<1.40	<1.40	
Cadmium	1									< 0.450	< 0.450	< 0.450	
Chromium	5	0.6	0.6	0.6	0.6	6	6	6	6	< 0.450	< 0.450	< 0.450	
Lead	5									< 0.450	< 0.450	< 0.450	
Mercury	0.2									< 0.0100	< 0.0100	< 0.0100	
Nickel		11	11	11	11	110	110	110	110	< 0.450	< 0.450	< 0.450	
Selenium	1									< 0.450	< 0.450	< 0.450	
Silver	5									< 0.450	< 0.450	< 0.450	
Total Metals (mg/kg)													
Total Lead		NA	NA	NA	NA	NA	NA	NA	NA	20.9	13.1	40.2	
Total Petroleum Hydrocarbons (n	ng/kg)												
Diesel Range Organics										30,000	5,260	9,610	

Notes and Abbreviations:

-- Analyte is not listed as characteristically hazardous or as an analyte associated with the listed waste.

< x = Sample result was not detected with reporting limit value of x.

B = The indicated compound was found in the associated method blank as well as the laboratory samples.

J = Estimated value below the lowest calibration point.

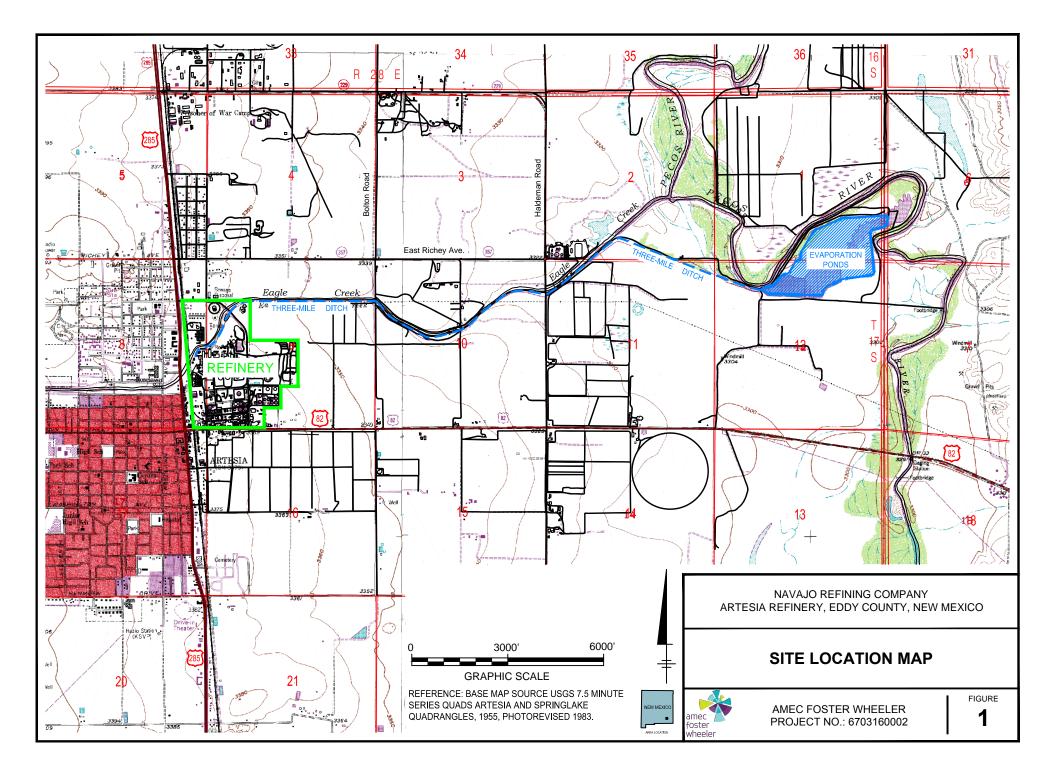
mg/kg = milligrams per kilogram

mg/L = milligrams per liter

NA = Analyte .identified in 40 CFR 268.40 as associated with the waste code, but standard listed as "not applicable for non-wastewater forms"



Figures





AMEC FOSTER WHEELER PROJECT NO.: 6703160002

250

500

SCALE IN FEET

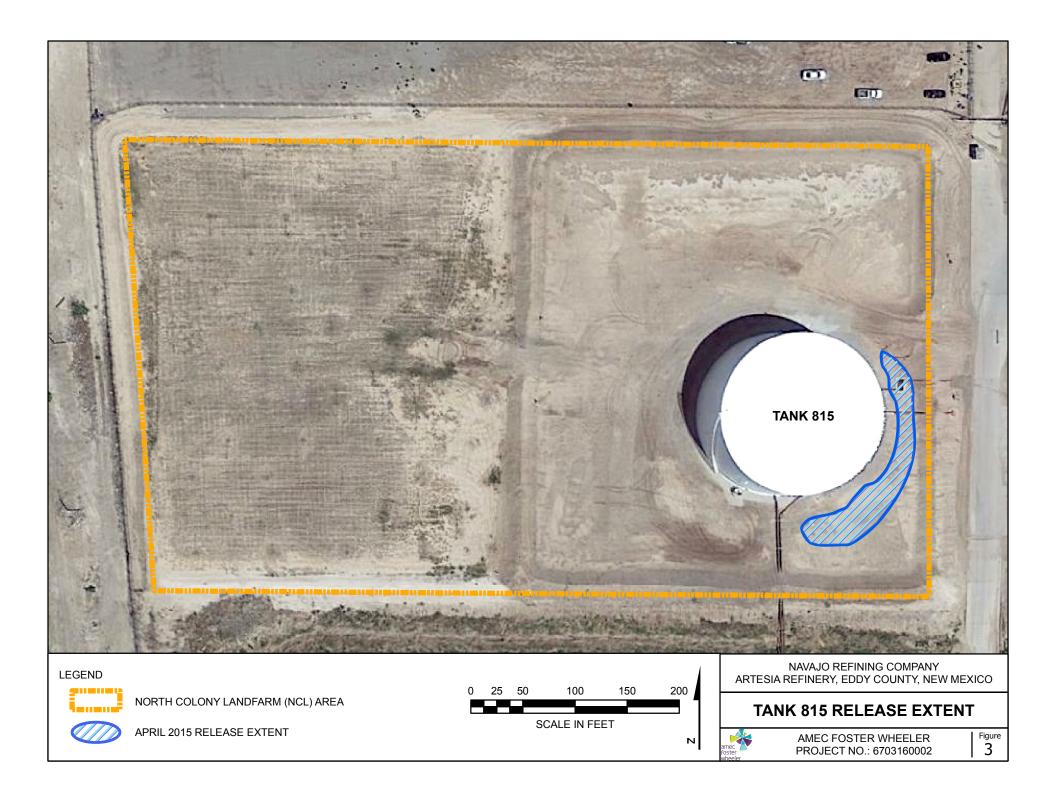
NAVAJO REFINING COMPANY

FIGURE

1,000

750

2





Attachment A Initial C-141 Form L.L.C.

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Statut 10, 1111 07505											
Release Notification and Corrective Action											
	OPERATOR	🛛 Initial Report	Final Report								
Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs										
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382										
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refin	ery									
Surface Owner: Navajo Refining Company, Mineral Ov	wner N/A	API No. N/A									

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County				

Latitude_Longitude_

NATURE OF RELEASE

Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls					
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence:	Date and Hour of Discovery: 04/16/15					
	04/16/15, Unknown time 6:30 am						
Was Immediate Notice Given?	If YES, To Whom?						
🛛 Yes 🗌 No 🗌 Not Required		inta Fe– Left message to Carl Chavez					
		- Left message to Leona Tsinnajinnie					
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 -						
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	itercourse.					
Yes 🛛 No	N/A						
If a Watercourse was Impacted, Describe Fully.*							
N/A							
Describe Cause of Problem and Remedial Action Taken.*							
The water collection sump from T-815 overflowed during routine dewate	ering of the tank. The water draw valve	e was immediately closed upon discovery					
and a vacuum truck was sent to recover any free liquids. The recovered l	liquids were returned to the crude proc	cess. The cause of the incident is under					
investigation.							
Describe Area Affected and Cleanup Action Taken.*							
Pooled liquids removed by vacuum truck and absorbent pads were used t	o remove remaining hydrocarbons. R	emoval of the impacted soil from the spill					
will be collected in roll-off bins and characterized for disposal. Any add		ented in a Final C-141 report including					
analytical reports, map markups, photos, and waste characterization and	disposal records.						
I hereby certify that the information given above is true and complete to	the best of my knowledge and underst	and that numerant to NMOCD sular and					
regulations all operators are required to report and/or file certain release r							
public health or the environment. The acceptance of a C-141 report by the							
should their operations have failed to adequately investigate and remedia							
or the environment. In addition, NMOCD acceptance of a C-141 report of							
federal, state, or local laws and/or regulations.							
ΛΛΛ	OIL CONSER	VATION DIVISION					
Signature:							
	Approved by Environmental Speciali	ist:					
Printed Name: Robert Combs	· · · · · · · · · · · · · · · · · · ·	·····					
Title: Environmental Specialist	Approval Date:	Expiration Date:					
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached					
Date: 4/21/15 Phone: 575-746-5382							

* Attach Additional Sheets If Necessary



Attachment B Photographs





Photo 1: View of extent of release to north of the water draw sump. View is to the northwest, April 17, 2015.



Photo 2: View of extent of release to south of the water draw sump. View is to the south, April 17, 2015.





Photo 3: View of piping south of water draw sump. View is to the west, April 17, 2015.



Photo 4: View of area surrounding water draw sump after excavation and backfill. View is to the northwest, June 24, 2015.





Photo 5: View of piping south of water draw sump after excavation and backfill. View is to the west, June 24, 2015.



Photo x: View of southeastern corner of NCL, south of the water draw sump, after excavation and backfill. View is to the south-southwest, June 24, 2015.



Attachment C Correspondence HOLLYFRONTIER.

July 15, 2015

Mr. John Kieling Chief, Hazardous Waste Bureau New Mexico Environmental Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505 Certified Mail/Return Receipt 7015 0640 0006 9944 5680

RE: Extension Request for 90-day Storage Period Navajo Refining Company, L.L.C., Artesia Refinery RCRA Permit No. NMD048918817

Dear Mr. Kieling:

Navajo Refining Company (NRC) reported an overflow of a water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL) to the New Mexico Environment Department (NMED) on April 16, 2015, as required by the Resource Conservation and Recovery Act (RCRA)-Post-Closure Care Permit (Permit). The release was also reported to the New-Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD), as required by NRC's discharge permit (GW-028). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area.

In order to maintain appropriate cover for the NCL, the stained and saturated soil in the vicinity of the release was excavated and was placed into three covered, lined roll-off containers. Representative samples of the soil were collected from each roll-off bin and analytical data will be used to characterize the soil, for which NRC intends to request a "no longer contained-in" determination from NMED. The excavation was backfilled with clean soil to maintain the cover of the NCL. The excavated soils were containerized beginning on April 17, 2015 and, thus, the 90-day maximum temporary storage period for potentially hazardous soils is imminent.

NRC respectfully requests NMED's immediate approval of a 90-day accumulation period extension, allowed by 40 CFR 262.34 (b), as incorporated by references at NMAC 20.4.1.300. We believe that this one-time extension will provide adequate time for NMED's review and action on our "no longer contained-in" determination for the excavated soils.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

C:

Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C.

Robert Combs, NRC Micki Schultz, NRC



SUSANA MARTINEZ Governor JOHN A. SANCHEZ Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.env.nm.gov



RYAN FLYNN Cabinet Secretary BUTCH TONGATE Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

July 16, 2015

Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C. P.O. Box 159 Artesia, New Mexico 88211-0159

RE: APPROVAL

EXTENSION REQUEST FOR 90-DAY STORAGE PERIOD NAVAJO REFINING COMPANY, L.L.C. - ARTESIA REFINERY EPA ID NO. NMD048918817 HWB-NRC-MISC

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received the Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Extension Request for 90-Day Storage Period* (letter) dated July 15, 2015. On April 16, 2015, the Permittee reported an overflow of water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area. Excavated soil from the site was placed in three lined roll-off containers on April 17, 2015 and samples were collected from each roll-off to characterize the soil. The Permittee is approaching the 90-day time limit and is requesting NMED's immediate approval of an extension to the 90-day period allowable by 40 CFR 262.34(b), as incorporated by reference at NMAC 20.4.1.300. This one-time extension will provide additional time to temporarily store the potentially hazardous excavated soils on site and allow the Permittee to prepare a request for a "no longer contained-in" determination. NMED hereby approves the Permittee's extension request for an additional 30 days and must submit the "no longer contained-in" request as soon as possible.

S. Denton July 16, 2015 Page 2 of 2

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely, John E. Kieling Chief

Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. VanHorn, NMED HWB
L. Tsinnajinnie, NMED HWB
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, NRC, Artesia Refinery
P. Krueger, ARCADIS

File: Reading File and NRC 2015, HWB-NRC-MISC

HOLLYFRONTIER.

July 23, 2015

Mr. John Kieling Chief, Hazardous Waste Bureau New Mexico Environmental Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505

RE: Characterization of Soil Excavated from Tank 815 Release Navajo Refining Company, L.L.C., Artesia Refinery RCRA Permit No. NMD048918817

Dear Mr. Kieling:

Navajo Refining Company (NRC) reported an overflow of a water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL) to the New Mexico Environment Department (NMED) on April 16, 2015, as required by the Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit (Permit). The release was also reported to the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD), as required by the refinery's discharge permit (GW-028). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area.

In order to maintain appropriate cover for the NCL, the saturated soil in the vicinity of the release was excavated and was placed into three covered, lined roll-off containers (currently containing approximately 12 cubic yards per container). One representative sample (composite) of the excavated soil was collected from each of the roll-off containers and analyzed for constituents of concern. Table 1 provides a summary of the analytical results from the samples and compares the results to the concentrations for defining a waste as characteristically hazardous under the Toxicity Characteristic. Table 1 also provides a comparison of the analytical results to the land disposal restriction treatment standards for the listed wastes that were historically treated within the NCL, and the alternative standards for soils containing those listed wastes. A copy of the laboratory report is included as an attachment to this letter.

As demonstrated in Table 1, none of the concentrations reported for the constituents of concern in the samples exceeded the characteristically hazardous (toxicity) concentrations or the land disposal restriction treatment standards for soils. The sample collected from roll-off bin S. Bro 49 contained two constituents—chrysene and pyrene—at concentrations of 6.86 mg/kg and 10.4 mg/kg, respectively, above the relevant hazardous waste treatment standards for K048, K049 and K051 wastes (40 CFR 268.40, Table "Treatment Standards for Hazardous Waste," non-wastewater form).

As a conservatively protective measure, NRC plans to dispose of the contents of all three roll-off bins at an authorized RCRA Subtitle C treatment, storage, and disposal facility (TSDF). Based

Mr. John Kieling July 23, 2015 Page 2

upon the analytical characterization data and profile to be provided, the TSDF will process the material to remove organics prior to land disposal. However, because the samples indicate that the soil is not characteristically hazardous (toxicity) and all of the sample concentrations were below the land disposal restrictions treatment standards for soils, NRC requests that the soils in the three containers be designated as non-hazardous waste under a "no longer contained-in" determination. This designation will not affect NRC's decision to protectively manage the soils through off-site treatment and disposal, but NMED's action on our "no longer contained-in determination request" will affect the hazardous materials designation on a RCRA manifest.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C.

Enclosures

c: Robert Combs, NRC Micki Schultz, NRC Pam Krueger, ARCADIS Leslie Barras, TRC

Table 1 - Waste Soil Characterization Analytical Results

Tank 815 Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit	Hazardo	us Waste Treat	ment Standard	s (mg/kg)	Alternative Treatment Standards for Soils (mg/kg)				Analytical Results			
	(mg/L)	K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49	
Semivolatile Organic Compound	ds (mg/kg)		-	-	-	-	-		-				
2,4-Dimethylphenol			NA		NA		NA		NA	<18.5	<3.81	<38.1	
Acenaphthene				NA				NA		1.25 J	0.168 J	0.845 J	
Anthracene			3.4	3.4			34	34		0.552 J	0.262 J	1.35 J	
Benz(a)anthracene				3.4	3.4			34	34	0.246 J	0.634	2.63 J	
Benzo(a)pyrene		3.4	3.4	3.4		34	34	34		<1.83	0.488 J	2.13 J	
bis(2-Ethylhexyl) phthalate		28	28	28		280	280	280		<18.5	<3.81	<38.1	
Carbon disulfide			NA				NA			not analyzed	not analyzed	not analyzed	
Chrysene		3.4	3.4	3.4		34	34	34		0.395 J	0.662	6.86	
Di-n-butyl phthalate		28		28		280		280		<18.5	<3.81	<38.1	
Fluorene		NA		NA		NA		NA		2.2	0.290 J	0.994 J	
m-Cresol (3-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
Naphthalene		5.6	5.6	5.6	5.6	56	56	56	56	2.03	0.160 J	<3.77	
o-Cresol (2-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
p-Cresol (4-methylphenol)					5.6				56	<18.5	<3.81	<38.1	
Phenanthrene		5.6	5.6	5.6	5.6	56	56	56	56	0.996 J	0.896	3.87	
Phenol		6.2	6.2	6.2	6.2	62	62	62	62	<18.5	<3.81	<38.1	
Pyrene		8.2	8.2	8.2		82	82	82		1.82 J	1.59	10.4	
TCLP Volatile Organic Compou	inds (mg/L)								•				
1,1-Dichloroethene	0.7									< 0.050	< 0.050	< 0.050	
1,2-Dichloroethane	0.5									< 0.050	< 0.050	< 0.050	
2-Butanone	200									< 0.50	< 0.50	< 0.50	
Benzene	0.5									< 0.050	< 0.050	< 0.050	
Carbon tetrachloride	0.5									< 0.050	< 0.050	< 0.050	
Chlorobenzene	100									< 0.050	< 0.050	< 0.050	
Chloroform	б									< 0.25	< 0.25	< 0.25	
Tetrachloroethene	0.7									< 0.050	< 0.050	< 0.050	
Trichloroethene	0.5									< 0.050	< 0.050	< 0.050	
Vinyl Chloride	0.2									< 0.050	< 0.050	< 0.050	
TCLP Semivolatile Organic Cor	npounds (mg/L)				Į			4			L		
1,4-Dichlorobenzene	7.5									< 0.10	< 0.10	< 0.10	
2,4,5-Trichlorophenol	400									<0.10	<0.10	<0.10	
2,4,6-Trichlorophenol	2									<0.10	<0.10	<0.10	
2,4-Dinitrotoluene	0.13									<0.10	<0.10	<0.10	
Cresols, Total	200									<0.20	<0.20	<0.20	
Hexachlorobenzene	0.13									<0.10	<0.10	<0.10	
Hexachlorobutadiene	0.5									<0.10	<0.10	<0.10	
Hexachloroethane	3									<0.10	<0.10	<0.10	
Nitrobenzene	2									<0.10	<0.10	<0.10	
Pentachlorophenol	100									<0.10	<0.10	<0.10	
Pyridine	5									<0.10	<0.10	<0.10	

Table 1 - Waste Soil Characterization Analytical Results

Tank 815 Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit	Hazardo	us Waste Treat	ment Standard	s (mg/kg)	Alternativ	Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
	(mg/L)	K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49	
TCLP Metals (mg/L)													
Arsenic	5									< 0.450	< 0.450	< 0.450	
Barium	100									<1.40	<1.40	<1.40	
Cadmium	1									< 0.450	< 0.450	< 0.450	
Chromium	5	0.6	0.6	0.6	0.6	6	6	6	6	< 0.450	< 0.450	< 0.450	
Lead	5									< 0.450	< 0.450	< 0.450	
Mercury	0.2									< 0.0100	< 0.0100	< 0.0100	
Nickel		11	11	11	11	110	110	110	110	< 0.450	< 0.450	< 0.450	
Selenium	1									< 0.450	< 0.450	< 0.450	
Silver	5									< 0.450	< 0.450	< 0.450	
Total Metals (mg/kg)													
Total Lead		NA	NA	NA	NA	NA	NA	NA	NA	20.9	13.1	40.2	
Total Petroleum Hydrocarbons (n	ng/kg)												
Diesel Range Organics										30,000	5,260	9,610	

Notes and Abbreviations:

-- Analyte is not listed as characteristically hazardous or as an analyte associated with the listed waste.

< x = Sample result was not detected with reporting limit value of x.

B = The indicated compound was found in the associated method blank as well as the laboratory samples.

J = Estimated value below the lowest calibration point.

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

NA = Analyte .identified in 40 CFR 268.40 as associated with the waste code, but standard listed as "not applicable for non-wastewater forms"



ANALYTICAL REPORT June 02, 2015



ARCADIS US - TX

Sample Delivery Group: Samples Received: Project Number: Description:

L763904 05/08/2015 TX001155.0000 Navajo Refining Company - Artesia, NM

Report To:

Pam Krueger 2929 Briarpark Dr., Suite 300 Houston, TX 77042

Entire Report Reviewed By:

Pamela a. Langford Pam Langford

Pam Langford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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¹ Cp ² Tc ³ Ss ⁴ Cn ⁵ Sr ⁶ Qc ⁷ Gl ⁸ Al ⁹ Sc

*

ACCOUNT: ARCADIS US - TX PROJECT: TX001155.0000 SDG: L763904 DATE/TIME: 06/02/15 14:46 PAGE: 2 of 33

SAMPLE SUMMARY

	SAMPLE SU	JMMAI	RY	ON	IE LAB. NATIONWIDE	. 💥
TANK 815 S. BRO 25 L763904-01 Waste			Collected by I. Castro	Collected date/time 05/07/15 09:10	Received date/time 05/08/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst	- ² Tc
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 06:53	ESC	
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:37	JDG	3
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG	ິSs
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN	
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 14:48	ADF	⁴Cn
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 09:45	05/17/15 09:45	MCB	
TANK 815 S. BRO 53 L763904-02 Waste			Collected by I. Castro	Collected date/time 05/07/15 09:25	Received date/time 05/08/15 09:00	°Sr
Method	Batch	Dilution	Preparation	Analysis	Analysis Analyst	⁶ Qc
			date/time	date/time		
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 07:00	ESC	⁷ Gl
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:41	JDG	
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG	8
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN	A
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 15:58	ADF	
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 10:44	05/17/15 10:44	MCB	°Sc
TANK 815 S. BRO 49 L763904-03 Waste			Collected by I. Castro	Collected date/time 05/07/15 09:40	Received date/time 05/08/15 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst	-
Mercury by Method 7470A	WG788952	1	05/14/15 21:57	05/15/15 09:23	ESC	_
Metals (ICP) by Method 6010B	WG789055	1	05/15/15 23:32	05/17/15 13:39	JDG	
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG	
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN	
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 16:21	ADF	
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 11:04	05/17/15 11:04	MCB	
TRIP BLANK L763904-04 GW			Collected by I. Castro	Collected date/time 05/07/15 00:00	Received date/time 05/08/15 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst	-
Volatile Organic Compounds (GC/MS) by Method 8260B	WG787918	1	05/17/15 08:15	05/17/15 08:15	МСВ	-
TANK 815 S. BRO 25 L763904-05 Solid			Collected by I. Castro	Collected date/time 05/07/15 09:10	Received date/time 05/08/15 09:00	
Method	Batch	Dilution	Preparation	Analysis	Analysis Analyst	-
			date/time	date/time	1.70	_
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:35	LTB	
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	50	05/11/15 18:23	05/12/15 20:21	KMF	
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	100	05/12/15 18:02	05/13/15 14:40	CLG	
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL	
TANK 815 S. BRO 53 L763904-06 Solid			Collected by I. Castro	Collected date/time 05/07/15 09:25	Received date/time 05/08/15 09:00	_
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst	
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:40	LTB	_
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	10	05/11/15 18:23	05/12/15 19:58	KMF	
Semi-Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	20	05/11/15 18:23	05/13/15 20:02	KMF	
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	20	05/12/15 18:02	05/13/15 11:35	CLG	
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL	
ACCOUNT: ARCADIS US - TX	PROJECT: TX001155.0000		SDG: L763904	DATE/TIME: 06/02/15 14:46		GE: f 33
	17001100.0000		2.00004	00/02/13 14.40	50	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

TANK 815 S. BRO 49 L763904-07 Solid			Collected by I. Castro	Collected date/time 05/07/15 09:40	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation	Analysis	Analysis Analyst
			date/time	date/time	
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:44	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	100	05/11/15 18:23	05/12/15 20:44	KMF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	200	05/11/15 18:23	05/13/15 19:38	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	200	05/12/15 18:02	05/13/15 14:50	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL



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Ср

Τс

CASE NARRATIVE

²Tc ³Ss ⁴Cn ⁵Sr ⁶Qc ⁷Gl ⁸Al ⁹Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Pamela a. Langford Pam Langford

Pam Langford Technical Service Representative TANK 815 S. BRO 25 Collected date/time: 05/07/15 09:10

SAMPLE RESULTS - 01 L763904

ONE LAB. NATIONWIDE.

Preparation by Method 1311

	Result	Qualifier	Prep	Batch	Ср
Analyte			date / time		
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704	
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648	

Mercury by Method 7470A

Mercury by Met	hod 7470A							³ Ss
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	4
Analyte	mg/l		mg/l	mg/l		date / time		Cn
Mercury	ND		0.0100	0.20	1	05/15/2015 06:53	WG788910	

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
Arsenic	ND		0.450	5	1	05/17/2015 14:37	WG789056	
Barium	ND		1.40	100	1	05/17/2015 14:37	WG789056	
Cadmium	ND		0.450	1	1	05/17/2015 14:37	WG789056	
Chromium	ND		0.450	5	1	05/17/2015 14:37	WG789056	
Lead	ND		0.450	5	1	05/17/2015 14:37	WG789056	
Nickel	ND		0.450		1	05/17/2015 14:37	WG789056	
Selenium	ND		0.450	1	1	05/17/2015 14:37	WG789056	
Silver	ND		0.450	5	1	05/17/2015 14:37	WG789056	

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
Chlorobenzene	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
Chloroform	U		82.5	250	1	05/17/2015 09:45	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
2-Butanone (MEK)	U		165	500	1	05/17/2015 09:45	<u>WG789393</u>
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
Trichloroethene	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
Vinyl chloride	U		16.5	50.0	1	05/17/2015 09:45	<u>WG789393</u>
(S) Toluene-d8	101			88.5-111		05/17/2015 09:45	<u>WG789393</u>
(S) Dibromofluoromethane	97.8			78.3-121		05/17/2015 09:45	<u>WG789393</u>
(S) a,a,a-Trifluorotoluene	102			85.0-114		05/17/2015 09:45	<u>WG789393</u>
(S) 4-Bromofluorobenzene	104			71.0-126		05/17/2015 09:45	<u>WG789393</u>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 14:48	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 14:48	<u>WG789017</u>
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 14:48	<u>WG789017</u>
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 14:48	<u>WG789017</u>
Hexachloroethane	ND		0.100	3	1	05/15/2015 14:48	<u>WG789017</u>
Nitrobenzene	ND		0.100	2	1	05/15/2015 14:48	<u>WG789017</u>
Pyridine	ND		0.100	5	1	05/15/2015 14:48	<u>WG789017</u>
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 14:48	<u>WG789017</u>
2-Methylphenol	ND		0.100	200	1	05/15/2015 14:48	<u>WG789017</u>
Pentachlorophenol	ND		0.100	100	1	05/15/2015 14:48	<u>WG789017</u>
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 14:48	<u>WG789017</u>
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 14:48	<u>WG789017</u>
(S) 2-Fluorophenol	35.9		10.0-77.9	87		05/15/2015 14:48	WG789017

PROJECT: TX001155.0000

SDG: L763904

DATE/TIME: 06/02/15 14:46

SAMPLE RESULTS - 01

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch		С
Analyte	mg/l		mg/l	mg/l		date / time		L	_
(S) Phenol-d5	23.7		5.00-70.1	67		05/15/2015 14:48	WG789017	2	Т
(S) Nitrobenzene-d5	48.2		21.8-123	120		05/15/2015 14:48	WG789017		
(S) 2-Fluorobiphenyl	51.2		29.5-131	122		05/15/2015 14:48	WG789017	3	
(S) 2,4,6-Tribromophenol	75.5		11.2-130	148		05/15/2015 14:48	WG789017		S
(S) p-Terphenyl-d14	58.4		29.3-137	149		05/15/2015 14:48	WG789017	L	_

TANK 815 S. BRO 53 Collected date/time: 05/07/15 09:25

SAMPLE RESULTS - 02 L763904

ONE LAB. NATIONWIDE.

Preparation by Method 1311

	Result	Qualifier	Prep	Batch	Ср
Analyte			date / time		
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648	
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704	10

Mercury by Method 7470A

Mercury by Met	hod 7470A							³ Ss
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	4
Analyte	mg/l		mg/l	mg/l		date / time		Cn
Mercury	ND		0.0100	0.20	1	05/15/2015 07:00	WG788910	

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
Arsenic	ND		0.450	5	1	05/17/2015 14:41	WG789056	
Barium	ND		1.40	100	1	05/17/2015 14:41	WG789056	
Cadmium	ND		0.450	1	1	05/17/2015 14:41	WG789056	
Chromium	ND		0.450	5	1	05/17/2015 14:41	WG789056	
Lead	ND		0.450	5	1	05/17/2015 14:41	WG789056	
Nickel	ND		0.450		1	05/17/2015 14:41	WG789056	
Selenium	ND		0.450	1	1	05/17/2015 14:41	WG789056	
Silver	ND		0.450	5	1	05/17/2015 14:41	WG789056	

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
Chlorobenzene	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
Chloroform	U		82.5	250	1	05/17/2015 10:44	<u>WG789393</u>
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
2-Butanone (MEK)	U		165	500	1	05/17/2015 10:44	<u>WG789393</u>
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
Trichloroethene	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
Vinyl chloride	U		16.5	50.0	1	05/17/2015 10:44	<u>WG789393</u>
(S) Toluene-d8	101			88.5-111		05/17/2015 10:44	<u>WG789393</u>
(S) Dibromofluoromethane	97.1			78.3-121		05/17/2015 10:44	<u>WG789393</u>
(S) a,a,a-Trifluorotoluene	101			85.0-114		05/17/2015 10:44	<u>WG789393</u>
(S) 4-Bromofluorobenzene	103			71.0-126		05/17/2015 10:44	<u>WG789393</u>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 15:58	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 15:58	<u>WG789017</u>
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 15:58	<u>WG789017</u>
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 15:58	<u>WG789017</u>
Hexachloroethane	ND		0.100	3	1	05/15/2015 15:58	<u>WG789017</u>
Nitrobenzene	ND		0.100	2	1	05/15/2015 15:58	<u>WG789017</u>
Pyridine	ND		0.100	5	1	05/15/2015 15:58	<u>WG789017</u>
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 15:58	<u>WG789017</u>
2-Methylphenol	ND		0.100	200	1	05/15/2015 15:58	<u>WG789017</u>
Pentachlorophenol	ND		0.100	100	1	05/15/2015 15:58	<u>WG789017</u>
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 15:58	<u>WG789017</u>
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 15:58	<u>WG789017</u>
(S) 2-Fluorophenol	45.0		10.0-77.9	87		05/15/2015 15:58	WG789017

PROJECT: TX001155.0000

SDG: L763904

SAMPLE RESULTS - 02

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	Ċ
Analyte	mg/l		mg/l	mg/l		date / time		
(S) Phenol-d5	31.7		5.00-70.1	67		05/15/2015 15:58	WG789017	^{2}T
(S) Nitrobenzene-d5	59.1		21.8-123	120		05/15/2015 15:58	WG789017	
(S) 2-Fluorobiphenyl	63.0		29.5-131	122		05/15/2015 15:58	WG789017	3
(S) 2,4,6-Tribromophenol	81.8		11.2-130	148		05/15/2015 15:58	WG789017	S
(S) p-Terphenyl-d14	65.4		29.3-137	149		05/15/2015 15:58	WG789017	

TANK 815 S. BRO 49 Collected date/time: 05/07/15 09:40

SAMPLE RESULTS - 03 L763904

ONE LAB. NATIONWIDE.

Preparation by Method 1311

	Result	Qualifier	Prep	Batch	Ср
Analyte			date / time		
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648	² Tc
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704	10

Mercury by Method 7470A

Mercury by Met	hod 7470A							³ Ss
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	4
Analyte	mg/l		mg/l	mg/l		date / time		Cn
Mercury	ND		0.0100	0.20	1	05/15/2015 09:23	WG788952	

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
Arsenic	ND		0.450	5	1	05/17/2015 13:39	WG789055	
Barium	ND		1.40	100	1	05/17/2015 13:39	WG789055	
Cadmium	ND		0.450	1	1	05/17/2015 13:39	WG789055	
Chromium	ND		0.450	5	1	05/17/2015 13:39	WG789055	
Lead	ND		0.450	5	1	05/17/2015 13:39	WG789055	
Nickel	ND		0.450		1	05/17/2015 13:39	WG789055	
Selenium	ND		0.450	1	1	05/17/2015 13:39	WG789055	
Silver	ND		0.450	5	1	05/17/2015 13:39	WG789055	

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
Chlorobenzene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Chloroform	U		82.5	250	1	05/17/2015 11:04	<u>WG789393</u>
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
2-Butanone (MEK)	U		165	500	1	05/17/2015 11:04	<u>WG789393</u>
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
Trichloroethene	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
Vinyl chloride	U		16.5	50.0	1	05/17/2015 11:04	<u>WG789393</u>
(S) Toluene-d8	100			88.5-111		05/17/2015 11:04	<u>WG789393</u>
(S) Dibromofluoromethane	97.9			78.3-121		05/17/2015 11:04	<u>WG789393</u>
(S) a,a,a-Trifluorotoluene	101			85.0-114		05/17/2015 11:04	<u>WG789393</u>
(S) 4-Bromofluorobenzene	104			71.0-126		05/17/2015 11:04	<u>WG789393</u>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 16:21	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 16:21	<u>WG789017</u>
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 16:21	<u>WG789017</u>
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 16:21	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 16:21	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 16:21	<u>WG789017</u>
Pyridine	ND		0.100	5	1	05/15/2015 16:21	<u>WG789017</u>
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 16:21	<u>WG789017</u>
2-Methylphenol	ND		0.100	200	1	05/15/2015 16:21	<u>WG789017</u>
Pentachlorophenol	ND		0.100	100	1	05/15/2015 16:21	<u>WG789017</u>
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 16:21	<u>WG789017</u>
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 16:21	<u>WG789017</u>
(S) 2-Fluorophenol	38.2		10.0-77.9	87		05/15/2015 16:21	WG789017

PROJECT: TX001155.0000

SDG: L763904

DATE/TIME: 06/02/15 14:46

SAMPLE RESULTS - 03

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	L Ct
Analyte	mg/l		mg/l	mg/l		date / time		
(S) Phenol-d5	25.7		5.00-70.1	67		05/15/2015 16:21	WG789017	2 Tc
(S) Nitrobenzene-d5	51.2		21.8-123	120		05/15/2015 16:21	WG789017	
(S) 2-Fluorobiphenyl	53.5		29.5-131	122		05/15/2015 16:21	WG789017	3
(S) 2,4,6-Tribromophenol	69.8		11.2-130	148		05/15/2015 16:21	WG789017	Ss
(S) p-Terphenyl-d14	55.3		29.3-137	149		05/15/2015 16:21	WG789017	

SAMPLE RESULTS - 04

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Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Benzene	U		0.330	1.00	1	05/17/2015 08:15	WG787918	
Carbon tetrachloride	U		0.380	1.00	1	05/17/2015 08:15	<u>WG787918</u>	
Chloroform	U		0.320	5.00	1	05/17/2015 08:15	WG787918	
1,2-Dibromoethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918	
1,1-Dichloroethane	U		0.260	1.00	1	05/17/2015 08:15	WG787918	
1,2-Dichloroethane	U		0.360	1.00	1	05/17/2015 08:15	WG787918	
1,1-Dichloroethene	U		0.400	1.00	1	05/17/2015 08:15	WG787918	
Ethylbenzene	U		0.380	1.00	1	05/17/2015 08:15	WG787918	
Methylene Chloride	U		1.00	5.00	1	05/17/2015 08:15	WG787918	
1,1,1,2-Tetrachloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918	
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	05/17/2015 08:15	WG787918	
Toluene	U		0.780	5.00	1	05/17/2015 08:15	WG787918	
1,1,1-Trichloroethane	U		0.319	1.00	1	05/17/2015 08:15	WG787918	
1,1,2-Trichloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918	
Vinyl chloride	U		0.260	1.00	1	05/17/2015 08:15	WG787918	
o-Xylene	U		0.340	1.00	1	05/17/2015 08:15	WG787918	
m&p-Xylene	U		0.720	2.00	1	05/17/2015 08:15	WG787918	
Xylenes, Total	U		1.10	3.00	1	05/17/2015 08:15	WG787918	
(S) Toluene-d8	99.8			88.5-111		05/17/2015 08:15	WG787918	
(S) Dibromofluoromethane	93.5			78.3-121		05/17/2015 08:15	WG787918	
(S) 4-Bromofluorobenzene	101			71.0-126		05/17/2015 08:15	WG787918	

SAMPLE RESULTS - 05 L763904

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	Result	Qualifier	Dilution	Analysis	Batch			
Analyte	%			date / time				
Total Solids	90.1		1	05/12/2015 09:21	WG7880	85		
Motale (ICD) by M	lothad 6010P							
Metals (ICP) by N		0.115						
Metals (ICP) by M	Result (dry)	Qualifier	MDL mg/kg	RDL (dry)	Dilution	Analysis	Batch	
Metals (ICP) by M Analyte Lead		Qualifier	MDL mg/kg 0.210	())	Dilution	Analysis date / time 05/13/2015 12:35	Batch WG788480	

Result (dry) Qualifier MDL RDL (dry) Dilution Analysis Batch Analyte mg/kg mg/kg mg/kg date / time WG788415 TPH (GC/FID) High Fraction 30000 85.0 444 05/13/2015 14:40 100 WG788415 (S) o-Terphenyl 0.000 50.0-150 05/13/2015 14:40 X

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

TANK 815 S. BRO 25

Collected date/time: 05/07/15 09:10

	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Benzo(a)pyrene	U		0.300	1.83	50	05/12/2015 20:21	WG788184	
Naphthalene	2.03		0.490	1.83	50	05/12/2015 20:21	<u>WG788184</u>	
2,4-Dimethylphenol	U		2.70	18.5	50	05/12/2015 20:21	WG788184	
Acenaphthene	1.25	J	0.360	1.83	50	05/12/2015 20:21	<u>WG788184</u>	
Anthracene	0.552	J	0.360	1.83	50	05/12/2015 20:21	WG788184	
Benzo(A)Anthracene	0.246	J	0.230	1.83	50	05/12/2015 20:21	<u>WG788184</u>	
Bis(2-Ethylhexyl)phthalate	U		0.660	18.5	50	05/12/2015 20:21	WG788184	
Chrysene	0.395	J	0.310	1.83	50	05/12/2015 20:21	<u>WG788184</u>	
Di-n-butyl phthalate	U		0.600	18.5	50	05/12/2015 20:21	WG788184	
Fluorene	2.20		0.380	1.83	50	05/12/2015 20:21	<u>WG788184</u>	
3&4-Methyl Phenol	U		0.430	18.5	50	05/12/2015 20:21	WG788184	
2-Methylphenol	U		0.540	18.5	50	05/12/2015 20:21	<u>WG788184</u>	
Phenanthrene	0.996	J	0.290	1.83	50	05/12/2015 20:21	WG788184	
Phenol	U		0.390	18.5	50	05/12/2015 20:21	<u>WG788184</u>	
Pyrene	1.82	J	0.690	1.83	50	05/12/2015 20:21	WG788184	
(S) 2-Fluorophenol	74.2	$\underline{\times}$		21.1-116		05/12/2015 20:21	<u>WG788184</u>	
(S) Phenol-d5	92.5	$\underline{\times}$		26.3-121		05/12/2015 20:21	WG788184	
(S) Nitrobenzene-d5	163	$\underline{\times}$		21.9-129		05/12/2015 20:21	WG788184	
(S) 2-Fluorobiphenyl	89.1	$\underline{\times}$		34.9-129		05/12/2015 20:21	WG788184	
(S) 2,4,6-Tribromophenol	89.2	$\underline{\times}$		21.6-142		05/12/2015 20:21	WG788184	
(S) p-Terphenyl-d14	114	$\underline{\times}$		21.5-128		05/12/2015 20:21	WG788184	

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	87.4		1	05/12/2015 09:21	WG788085

SAMPLE RESULTS - 06

L763904

Metals (ICP) by Method 6010B

	Result (dry)	Qualifier	MDL	PDL (dp)	Dilution	Analysis	Patch	S
	Result (uly)	Qualifier	IVIDL	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		4
ead	13.1		0.220	0.572	1	05/13/2015 12:40	WG788480	

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		6Q
TPH (GC/FID) High Fraction	5260		17.0	91.5	20	05/13/2015 11:35	WG788415	
(S) o-Terphenyl	0.000	X		50.0-150		05/13/2015 11:35	WG788415	7

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Benzo(a)pyrene	0.488	J	0.120	0.755	20	05/13/2015 20:02	WG788184	
Naphthalene	0.160	J	0.100	0.378	10	05/12/2015 19:58	WG788184	
2,4-Dimethylphenol	U		0.540	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
Acenaphthene	0.168	J	0.0730	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
Anthracene	0.262	J	0.0720	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
Benzo(A)Anthracene	0.634		0.0490	0.378	10	05/12/2015 19:58	WG788184	
Bis(2-Ethylhexyl)phthalate	U		0.140	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
Chrysene	0.662		0.0640	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
Di-n-butyl phthalate	U		0.120	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
Fluorene	0.290	J	0.0780	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
3&4-Methyl Phenol	U		0.0890	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
2-Methylphenol	U		0.110	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
Phenanthrene	0.896		0.0610	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
Phenol	U		0.0800	3.81	10	05/12/2015 19:58	<u>WG788184</u>	
Pyrene	1.59		0.140	0.378	10	05/12/2015 19:58	<u>WG788184</u>	
(S) 2-Fluorophenol	77.5			21.1-116		05/12/2015 19:58	<u>WG788184</u>	
(S) Phenol-d5	79.1			26.3-121		05/12/2015 19:58	<u>WG788184</u>	
(S) Nitrobenzene-d5	114			21.9-129		05/12/2015 19:58	<u>WG788184</u>	
(S) 2-Fluorobiphenyl	77.3			34.9-129		05/12/2015 19:58	WG788184	
(S) 2,4,6-Tribromophenol	91.2			21.6-142		05/12/2015 19:58	WG788184	
(S) p-Terphenyl-d14	87.7			21.5-128		05/12/2015 19:58	<u>WG788184</u>	



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	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		6
TPH (GC/FID) High Fraction	9610		170	915	200	05/13/2015 14:50	WG788415	
(S) o-Terphenyl	0.000	X		50.0-150		05/13/2015 14:50	WG788415	7

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch	
nalyte	mg/kg		mg/kg	mg/kg		date / time		
Benzo(a)pyrene	2.13	J	1.20	7.55	200	05/13/2015 19:38	WG788184	
laphthalene	U		1.00	3.77	100	05/12/2015 20:44	WG788184	
,4-Dimethylphenol	U		5.40	38.1	100	05/12/2015 20:44	WG788184	
cenaphthene	0.845	J	0.730	3.77	100	05/12/2015 20:44	WG788184	
Inthracene	1.35	J	0.720	3.77	100	05/12/2015 20:44	WG788184	
Benzo(A)Anthracene	2.63	J	0.490	3.77	100	05/12/2015 20:44	WG788184	
Bis(2-Ethylhexyl)phthalate	U		1.40	38.1	100	05/12/2015 20:44	WG788184	
Chrysene	6.86		0.640	3.77	100	05/12/2015 20:44	WG788184	
)i-n-butyl phthalate	U		1.20	38.1	100	05/12/2015 20:44	WG788184	
luorene	0.994	J	0.780	3.77	100	05/12/2015 20:44	WG788184	
&4-Methyl Phenol	U		0.890	38.1	100	05/12/2015 20:44	WG788184	
-Methylphenol	U		1.10	38.1	100	05/12/2015 20:44	WG788184	
Phenanthrene	3.87		0.610	3.77	100	05/12/2015 20:44	WG788184	
Phenol	U		0.800	38.1	100	05/12/2015 20:44	WG788184	
yrene	10.4		1.40	3.77	100	05/12/2015 20:44	WG788184	
(S) 2-Fluorophenol	69.5	X		21.1-116		05/12/2015 20:44	WG788184	
(S) Phenol-d5	71.0	X		26.3-121		05/12/2015 20:44	WG788184	
(S) Nitrobenzene-d5	126	X		21.9-129		05/12/2015 20:44	WG788184	
(S) 2-Fluorobiphenyl	86.6	X		34.9-129		05/12/2015 20:44	WG788184	
(S) 2,4,6-Tribromophenol	83.2	X		21.6-142		05/12/2015 20:44	WG788184	
(S) p-Terphenyl-d14	140	$\underline{\times}$		21.5-128		05/12/2015 20:44	WG788184	

Metals (ICP) by Method 6010B

Total Solids by Method 2540 G-2011

TANK 815 S. BRO 49

Total Solids

Analyte

Lead

Collected date/time: 05/07/15 09:40

Result Qualifier %

87.4

Result (dry)

mg/kg

40.2

05/12/2015 09:21

RDL (dry)

mg/kg

0.572

Batch

Dilution

1

WG788085

Analysis

date / time

05/13/2015 12:44

SAMPLE RESULTS - 07

L763904



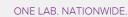
1

MDL

mg/kg

0.220

Qualifier



Batch

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Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

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Method Blank (MB)

Analyte % %
Analyte % % %
Total Solids 0.000900

L763908-02 Original Sample (OS) • Duplicate (DUP)

(OS) 05/12/15 09:21 • (DUP) 05/12	2/15 09:22					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	79.1	78.0	1	1.44		5

Laboratory Control Sample (LCS)

(LCS) 05/12/15 09:20					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Mercury by Method 7470A

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Method Blank (MB)

(MB) 05/15/15 06:34				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.0033	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 06:36 • (LCSD) 05/	15/15 06:38									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0295	0.0284	98	95	80-120			4	20

L763935-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:40 • (MS) 05/15/	/15 06:42 • (N	ISD) 05/15/15 06:4	14									
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0299	98	100	1	75-125			2	20

L764413-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:47 • (MS) 05/15/	′15 06:49 • (M	SD) 05/15/15 06:5	51									
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0239	0.0288	80	96	1	75-125			18	20

DATE/TIME: 06/02/15 14:46

Mercury by Method 7470A

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 05/15/15 09:06				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.0033	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 09:12 • (LCSD) 05/15/15 09:14											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
Mercury	0.0300	0.0289	0.0284	96	95	80-120			2	20	

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 09:17 • (MS) 05/15/15 09:19 • (MSD) 05/15/15 09:21												
	Spike Amou	Int Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0289	0.0289	96	96	1	75-125			0	20

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Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) 05/13/15 10:24				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Lead	U		0.19	0.500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:28 • (LCSD) 05/13/15 10:32											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Lead	100	104	108	104	108	80-120			4	20	

L763845-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/13/15 10:37 • (MS) 05/13/15 10:50 • (MSD) 05/13/15 11:09												
	Spike Amou	unt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Lead	100	3.93	102	107	98	103	1	75-125			5	20

DATE/TIME: 06/02/15 14:46

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) 05/17/15 13:06 MB Result MB Qualifier MB MDL MB RDL Analyte mg/l mg/l mg/l U Arsenic 0.149 0.450 U 0.446 1.35 Barium U Cadmium 0.149 0.450 U 0.149 0.450 Chromium U 0.149 0.450 Lead U 0.149 0.450 Nickel Selenium U 0.149 0.450 U Silver 0.149 0.450

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:10 • (LCSD) 05/17/15 13:16											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
Arsenic	9.00	9.21	9.10	102	101	80-120			1	20	
Barium	9.00	9.47	9.40	105	104	80-120			1	20	
Cadmium	9.00	9.39	9.30	104	103	80-120			1	20	
Chromium	9.00	9.48	9.50	105	106	80-120			0	20	
Lead	9.00	9.42	9.34	105	104	80-120			1	20	
Nickel	9.00	9.19	9.10	102	101	80-120			1	20	
Selenium	9.00	9.70	9.52	108	106	80-120			2	20	
Silver	9.00	9.47	9.43	105	105	80-120			0	20	

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 13:21 • (MS) 05/17/15 13:30 • (MSD) 05/17/15 13:34 MS Result MSD Result MSD Rec. RPD **RPD** Limits Spike Amount Original Result MS Rec. Dilution MSD Qualifier Rec. Limits MS Qualifier % Analyte mg/l mg/l mg/l mg/l % % % % ND 75-125 1 20 Arsenic 9.00 9.49 9.55 105 106 1 2.58 75-125 20 Barium 9.00 11.7 11.6 102 101 1 1 Cadmium 9.00 ND 9.60 9.53 107 106 1 75-125 1 20 0.00831 9.12 75-125 20 Chromium 9.00 9.26 103 101 1 1 Lead 9.00 0.0154 9.41 9.32 104 103 1 75-125 1 20 75-125 Nickel 9.00 0.00105 9.25 9.19 103 102 20 1 Selenium 9.00 0.00165 10.2 10.1 113 112 1 75-125 0 20 9.53 75-125 Silver 9.00 ND 9.62 107 106 1 20 1

> ACCOUNT: ARCADIS US - TX

PROJECT: TX001155.0000 SDG: L763904 DATE/TIME: 06/02/15 14:46 PAGE: 20 of 33 Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 05/17/15 13:43				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Arsenic	U		0.149	0.450
Barium	U		0.446	1.35
Cadmium	U		0.149	0.450
Chromium	U		0.149	0.450
Lead	U		0.149	0.450
Nickel	U		0.149	0.450
Selenium	U		0.149	0.450
Silver	U		0.149	0.450

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:59 • (LCSD) 05/17/15 14:04										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Arsenic	9.00	9.66	9.46	107	105	80-120			2	20
Barium	9.00	9.82	9.61	109	107	80-120			2	20
Cadmium	9.00	9.74	9.52	108	106	80-120			2	20
Chromium	9.00	9.67	9.47	107	105	80-120			2	20
Lead	9.00	9.65	9.44	107	105	80-120			2	20
Selenium	9.00	10.2	9.94	113	110	80-120			2	20
Silver	9.00	9.74	9.52	108	106	80-120			2	20

L764199-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

RPD Limits
%
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20
20
20
20
20
20
20
20

PROJECT: TX001155.0000 SDG: L763904 DATE/TIME: 06/02/15 14:46 ¹Cp

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Volatile Organic Compounds (GC/MS) by Method 8260B

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 05/17/15 06:17					
· · · · · · · · · · · · · · · · · · ·	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	mg/l	
Benzene	U		0.000331	0.00100	
Carbon tetrachloride	U		0.000379	0.00100	
Chloroform	U		0.000324	0.00500	
1,2-Dibromoethane	U		0.000381	0.00100	
1,1-Dichloroethane	U		0.000259	0.00100	
1,2-Dichloroethane	U		0.000361	0.00100	
1,1-Dichloroethene	U		0.000398	0.00100	
Ethylbenzene	U		0.000384	0.00100	
Methylene Chloride	U		0.00100	0.00500	
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100	
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	
Toluene	U		0.000780	0.00500	
1,1,1-Trichloroethane	U		0.000319	0.00100	
1,1,2-Trichloroethane	U		0.000383	0.00100	
Vinyl chloride	U		0.000259	0.00100	
Xylenes, Total	U		0.00106	0.00300	
o-Xylene	U		0.000341	0.00100	
m&p-Xylenes	U		0.000719	0.00200	
(S) Toluene-d8	98.6			88.5-111	
(S) Dibromofluoromethane	93.1			78.3-121	
(S) 4-Bromofluorobenzene	99.0			71.0-126	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
Benzene	0.0250	0.0220	0.0217	87.8	86.7	74.8-121			1.27	20	
Carbon tetrachloride	0.0250	0.0241	0.0241	96.5	96.4	70.2-123			0.0800	20	
Chloroform	0.0250	0.0218	0.0217	87.3	86.9	76.0-121			0.470	20	
1,2-Dibromoethane	0.0250	0.0261	0.0260	104	104	76.6-121			0.160	20	
1,1-Dichloroethane	0.0250	0.0228	0.0229	91.2	91.4	70.7-126			0.230	20	
1,2-Dichloroethane	0.0250	0.0232	0.0236	92.8	94.2	68.8-124			1.55	20	
1,1-Dichloroethene	0.0250	0.0229	0.0221	91.5	88.4	67.8-129			3.52	20	
Ethylbenzene	0.0250	0.0253	0.0247	101	99.0	78.8-122			2.22	20	
Methylene Chloride	0.0250	0.0192	0.0182	76.9	72.6	70.3-120			5.69	20	
1,1,1,2-Tetrachloroethane	0.0250	0.0263	0.0260	105	104	74.2-124			1.21	20	
1,1,2,2-Tetrachloroethane	0.0250	0.0268	0.0269	107	108	70.7-122			0.110	20	

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
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QUALITY CONTROL SUMMARY L763904-04

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Toluene	0.0250	0.0228	0.0233	91.1	93.1	79.7-116			2.23	20
1,1,1-Trichloroethane	0.0250	0.0226	0.0235	90.3	94.0	73.2-123			4.00	20
1,1,2-Trichloroethane	0.0250	0.0250	0.0251	100	100	77.7-118			0.350	20
Vinyl chloride	0.0250	0.0223	0.0211	89.3	84.5	65.9-128			5.52	20
Xylenes, Total	0.0750	0.0761	0.0764	101	102	78.7-121			0.360	20
o-Xylene	0.0250	0.0258	0.0258	103	103	77.6-122			0.0300	20
m&p-Xylenes	0.0500	0.0503	0.0506	101	101	78.8-121			0.530	20
(S) Toluene-d8				99.7	101	88.5-111				
(S) Dibromofluoromethane				97.8	94.6	78.3-121				
(S) 4-Bromofluorobenzene				99.2	96.7	71.0-126				

L763891-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 08:32 • (MS) 05/17/15 08:50 • (MSD) 05/17/15 09:07

	Spike Amour	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Benzene	0.0250	ND	0.0195	0.0212	78.1	84.7	1	54.3-133			8.13	20
Carbon tetrachloride	0.0250	ND	0.0227	0.0233	90.7	93.4	1	55.7-134			2.86	20
Chloroform	0.0250	ND	0.0192	0.0207	76.7	83.0	1	63.0-129			7.91	20
1,2-Dibromoethane	0.0250	ND	0.0226	0.0262	90.4	105	1	67.1-125			15.0	20
1,1-Dichloroethane	0.0250	ND	0.0207	0.0221	82.8	88.5	1	58.5-132			6.65	20
1,2-Dichloroethane	0.0250	ND	0.0206	0.0225	82.4	90.1	1	60.0-126			8.91	20
1,1-Dichloroethene	0.0250	ND	0.0211	0.0222	84.4	88.9	1	51.1-140			5.22	20.2
Ethylbenzene	0.0250	ND	0.0233	0.0260	93.2	104	1	61.4-133			11.1	20
Methylene Chloride	0.0250	ND	0.0159	0.0171	63.7	68.2	1	58.1-122			6.93	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0236	0.0252	94.4	101	1	64.0-128			6.73	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0252	0.0265	101	106	1	56.0-132			4.85	22.2
Toluene	0.0250	ND	0.0206	0.0233	82.2	93.2	1	61.4-130			12.5	20
1,1,1-Trichloroethane	0.0250	ND	0.0215	0.0224	86.0	89.5	1	58.7-134			3.93	20
1,1,2-Trichloroethane	0.0250	ND	0.0234	0.0259	93.7	104	1	66.3-125			10.0	20
Vinyl chloride	0.0250	ND	0.0197	0.0210	78.9	83.9	1	47.8-137			6.23	20
Xylenes, Total	0.0750	ND	0.0700	0.0780	93.3	104	1	63.3-131			10.9	20
o-Xylene	0.0250	ND	0.0233	0.0256	93.2	103	1	63.3-130			9.58	20
m&p-Xylenes	0.0500	ND	0.0467	0.0524	93.4	105	1	61.7-133			11.5	20
(S) Toluene-d8					98.7	98.7		88.5-111				
(S) Dibromofluoromethane					98.4	93.9		78.3-121				
(S) 4-Bromofluorobenzene					99.1	100		71.0-126				

ACCOUNT: ARCADIS US - TX

PROJECT: TX001155.0000

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Volatile Organic Compounds (GC/MS) by Method 8260B

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 05/17/15 09:26				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Benzene	U		0.0165	0.0500
Carbon tetrachloride	U		0.0165	0.0500
Chlorobenzene	U		0.0165	0.0500
Chloroform	U		0.0825	0.250
1,2-Dichloroethane	U		0.0165	0.0500
1,1-Dichloroethene	U		0.0165	0.0500
2-Butanone (MEK)	U		0.165	0.500
Tetrachloroethene	U		0.0165	0.0500
Trichloroethene	U		0.0165	0.0500
Vinyl chloride	U		0.0165	0.0500
(S) Toluene-d8	101			88.5-111
(S) Dibromofluoromethane	98.4			78.3-121
(S) a,a,a-Trifluorotoluene	101			85.0-114
(S) 4-Bromofluorobenzene	103			71.0-126

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 06:53 · (LCSD)	05/17/15 07:12									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0250	0.0226	0.0252	90.4	101	74.8-121			11.0	20
Carbon tetrachloride	0.0250	0.0235	0.0262	94.0	105	70.2-123			10.9	20
Chlorobenzene	0.0250	0.0229	0.0255	91.5	102	78.1-119			10.7	20
Chloroform	0.0250	0.0231	0.0257	92.5	103	76.0-121			10.7	20
1,2-Dichloroethane	0.0250	0.0236	0.0264	94.5	105	68.8-124			10.9	20
1,1-Dichloroethene	0.0250	0.0237	0.0267	94.7	107	67.8-129			12.2	20
2-Butanone (MEK)	0.125	0.119	0.132	95.1	106	55.0-149			10.6	20
Tetrachloroethene	0.0250	0.0229	0.0257	91.7	103	72.6-126			11.4	20
Trichloroethene	0.0250	0.0229	0.0253	91.7	101	77.7-118			9.78	20
Vinyl chloride	0.0250	0.0254	0.0284	101	113	65.9-128			11.2	20
(S) Toluene-d8				101	101	88.5-111				
(S) Dibromofluoromethane				99.8	98.8	78.3-121				
(S) a,a,a-Trifluorotoluene				101	101	85.0-114				
(S) 4-Bromofluorobenzene				102	102	71.0-126				

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QUALITY CONTROL SUMMARY

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L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 09:45 • (MS) 05/17/15 10:05 • (MSD) 05/17/15 10:25

	Spike Amo	ount Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Benzene	1.25	ND	1.06	1.17	84.7	93.4	1	54.3-133			9.86	20
Carbon tetrachloride	1.25	ND	1.05	1.17	84.0	93.7	1	55.7-134			11.0	20
Chlorobenzene	1.25	ND	1.06	1.18	85.0	94.8	1	67.0-125			10.9	20.3
Chloroform	1.25	ND	1.08	1.20	86.5	96.1	1	63.0-129			10.4	20
1,2-Dichloroethane	1.25	ND	1.10	1.22	87.9	97.9	1	60.0-126			10.8	20
1,1-Dichloroethene	1.25	ND	1.09	1.19	86.9	95.4	1	51.1-140			9.29	20.2
2-Butanone (MEK)	6.25	ND	5.08	5.67	81.2	90.7	1	22.4-138			11.0	27
Tetrachloroethene	1.25	ND	1.05	1.17	84.3	93.3	1	53.0-139			10.1	20
Trichloroethene	1.25	ND	1.05	1.17	83.8	93.5	1	44.1-149			10.9	20
Vinyl chloride	1.25	ND	1.18	1.28	94.3	102	1	47.8-137			8.31	20
(S) Toluene-d8					101	102		88.5-111				
(S) Dibromofluoromethane					99.7	98.9		78.3-121				
(S) a,a,a-Trifluorotoluene					101	102		85.0-114				
(S) 4-Bromofluorobenzene					102	101		71.0-126				

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Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) 05/13/15 09:57				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	97.2			50.0-150

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:07 • (LCSD) 05/13/15 10:17											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
TPH (GC/FID) High Fraction	60.0	51.6	51.1	86.0	85.2	50.0-150			0.860	20	
(S) o-Terphenyl				87.8	89.9	50.0-150					

DATE/TIME: 06/02/15 14:46

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

QUALITY CONTROL SUMMARY

Method Blank (MB)

MB) 05/12/15 11:15					
	MB Result	MB Qualifier	MB MDL	MB RDL	
nalyte	mg/kg		mg/kg	mg/kg	
cenaphthene	U		0.00642	0.0330	
nthracene	U		0.00632	0.0330	
enzo(a)anthracene	U		0.00428	0.0330	
lenzo(a)pyrene	U		0.00548	0.0330	
Chrysene	U		0.00555	0.0330	
luorene	U		0.00682	0.0330	
laphthalene	U		0.00889	0.0330	
henanthrene	U		0.00528	0.0330	
is(2-ethylhexyl)phthalate	U		0.0120	0.333	
i-n-butyl phthalate	U		0.0109	0.333	
/rene	U		0.0123	0.0330	
Methylphenol	U		0.00986	0.333	
4-Methyl Phenol	U		0.00783	0.333	
1-Dimethylphenol	U		0.0471	0.333	
enol	U		0.00695	0.333	
(S) Nitrobenzene-d5	70.2			21.9-129	
(S) 2-Fluorobiphenyl	73.9			34.9-129	
(S) p-Terphenyl-d14	70.1			21.5-128	
(S) Phenol-d5	72.7			26.3-121	
(S) 2-Fluorophenol	68.9			21.1-116	
(S) 2,4,6-Tribromophenol	74.8			21.6-142	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/	(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits		
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%		
Acenaphthene	0.667	0.493	0.506	74.0	75.8	48.9-107			2.44	20		
Anthracene	0.667	0.528	0.529	79.1	79.4	52.0-112			0.320	20		
Benzo(a)anthracene	0.667	0.530	0.515	79.4	77.2	52.3-106			2.86	20		
Benzo(a)pyrene	0.667	0.532	0.526	79.7	78.9	51.9-106			1.01	20		
Chrysene	0.667	0.507	0.499	76.0	74.7	54.4-110			1.69	20		
Fluorene	0.667	0.512	0.524	76.7	78.5	51.1-109			2.35	20		
Naphthalene	0.667	0.464	0.473	69.6	71.0	43.4-103			2.02	20		
Phenanthrene	0.667	0.502	0.511	75.2	76.6	51.6-107			1.76	20		
Bis(2-ethylhexyl)phthalate	0.667	0.513	0.508	76.9	76.1	48.1-116			1.09	20.5		
Di-n-butyl phthalate	0.667	0.506	0.512	75.9	76.8	49.7-113			1.22	20		
Pyrene	0.667	0.541	0.517	81.2	77.5	47.1-108			4.55	20		

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QUALITY CONTROL SUMMARY

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Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
2-Methylphenol	0.667	0.448	0.468	67.2	70.1	42.4-100			4.23	20
3&4-Methyl Phenol	0.667	0.512	0.534	76.7	80.0	50.5-115			4.17	20
2,4-Dimethylphenol	0.667	0.472	0.470	70.8	70.4	42.2-110			0.520	20
Phenol	0.667	0.467	0.478	70.0	71.7	41.5-106			2.41	20
(S) Nitrobenzene-d5				72.6	72.7	21.9-129				
(S) 2-Fluorobiphenyl				77.3	78.0	34.9-129				
(S) p-Terphenyl-d14				74.3	69.3	21.5-128				
(S) Phenol-d5				72.3	73.2	26.3-121				
(S) 2-Fluorophenol				70.5	69.7	21.1-116				
(S) 2,4,6-Tribromophenol				88.7	87.8	21.6-142				

L764231-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/12/15 15:41 • (MS) 05/12/1	5 16:05 • (MSD) 05/12/15 16:28										
	Spike Amount	t Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Acenaphthene	0.667	ND	0.529	0.511	79.2	76.7	1	32.2-134			3.30	27.3
Anthracene	0.667	ND	0.538	0.528	80.7	79.2	1	32.3-137			1.87	28.4
Benzo(a)anthracene	0.667	ND	0.531	0.515	79.6	77.3	1	33.3-124			3.00	29
Benzo(a)pyrene	0.667	ND	0.528	0.523	79.1	78.4	1	28.2-128			0.950	28.4
Chrysene	0.667	ND	0.499	0.486	74.8	72.9	1	36.3-129			2.58	28
Fluorene	0.667	ND	0.542	0.525	81.3	78.8	1	34.0-133			3.15	27.1
Naphthalene	0.667	ND	0.489	0.480	73.3	71.9	1	36.4-121			1.94	27.2
Phenanthrene	0.667	ND	0.517	0.510	77.5	76.4	1	30.8-137			1.49	26.5
Bis(2-ethylhexyl)phthalate	0.667	ND	0.525	0.510	78.7	76.5	1	21.8-141			2.85	35.2
Di-n-butyl phthalate	0.667	0.00527	0.532	0.526	78.9	78.0	1	32.2-133			1.12	25.9
Pyrene	0.667	ND	0.529	0.496	79.4	74.3	1	24.1-130			6.53	29.9
2-Methylphenol	0.667	ND	0.474	0.466	71.1	69.9	1	30.3-118			1.70	25.1
3&4-Methyl Phenol	0.667	ND	0.546	0.538	81.9	80.6	1	33.3-141			1.52	25.7
2,4-Dimethylphenol	0.667	ND	0.504	0.498	75.5	74.7	1	12.3-149			1.09	32.3
Phenol	0.667	ND	0.490	0.490	73.5	73.5	1	25.1-130			0.0200	29.6
(S) Nitrobenzene-d5					76.5	76.3		21.9-129				
(S) 2-Fluorobiphenyl					82.2	79.8		34.9-129				
(S) p-Terphenyl-d14					69.7	67.5		21.5-128				
(S) Phenol-d5					73.9	73.8		26.3-121				
(S) 2-Fluorophenol					75.3	74.1		21.1-116				
(S) 2,4,6-Tribromophenol					91.6	91.8		21.6-142				

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Semi Volatile Organic Compounds (GC/MS) by Method 8270C

QUALITY CONTROL SUMMARY L763904-01,02,03

Method Blank (MB)

(MB) 05/15/15 11:20				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
1,4-Dichlorobenzene	U		0.0330	0.100
2,4-Dinitrotoluene	U		0.0330	0.100
Hexachlorobenzene	U		0.0330	0.100
Hexachloro-1,3-butadiene	U		0.0330	0.100
Hexachloroethane	U		0.0330	0.100
Nitrobenzene	U		0.0330	0.100
Pyridine	U		0.0330	0.100
2-Methylphenol	U		0.0330	0.100
3&4-Methyl Phenol	U		0.0330	0.100
Pentachlorophenol	U		0.0330	0.100
2,4,5-Trichlorophenol	U		0.0330	0.100
2,4,6-Trichlorophenol	U		0.0330	0.100
(S) Nitrobenzene-d5	60.7			21.8-123
(S) 2-Fluorobiphenyl	59.3			29.5-131
(S) p-Terphenyl-d14	59.9			29.3-137
(S) Phenol-d5	30.3			5.00-70.1
(S) 2-Fluorophenol	45.1			10.0-77.9
(S) 2,4,6-Tribromophenol	73.3			11.2-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 10:10 • (LCSD) 05	/15/15 10:33									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
1,4-Dichlorobenzene	0.0500	0.0222	0.0253	44.4	50.6	21.0-89.4			13.1	32.6
2,4-Dinitrotoluene	0.0500	0.0333	0.0371	66.5	74.2	31.2-105			11.0	22
Hexachlorobenzene	0.0500	0.0365	0.0402	73.0	80.5	38.5-116			9.77	20.1
Hexachloro-1,3-butadiene	0.0500	0.0254	0.0295	50.8	59.0	16.1-104			14.9	31.2
Hexachloroethane	0.0500	0.0207	0.0246	41.3	49.2	16.5-89.8			17.4	30.7
Nitrobenzene	0.0500	0.0299	0.0313	59.8	62.5	31.4-106			4.55	25.7
Pyridine	0.0500	0.0112	0.0121	22.5	24.1	13.5-58.9			7.10	32.5
2-Methylphenol	0.0500	0.0259	0.0279	51.8	55.9	26.4-86.9			7.61	26.5
3&4-Methyl Phenol	0.0500	0.0293	0.0312	58.6	62.4	27.9-92.0			6.34	27
Pentachlorophenol	0.0500	0.0340	0.0391	67.9	78.2	10.0-97.4			14.1	35.1
2,4,5-Trichlorophenol	0.0500	0.0356	0.0390	71.3	78.0	34.9-112			9.09	23.9
2,4,6-Trichlorophenol	0.0500	0.0361	0.0404	72.1	80.7	29.8-107			11.2	24.1
(S) Nitrobenzene-d5				56.6	59.6	21.8-123				
(S) 2-Fluorobiphenyl				59.6	62.1	29.5-131				

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
ARCADIS US - TX	TX001155.0000	L763904	06/02/15 14:46	29 of 33

ONE LAB. NATIONWIDE.

QUALITY CONTROL SUMMARY

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
(S) p-Terphenyl-d14				53.7	59.2	29.3-137				
(S) Phenol-d5				31.3	32.6	5.00-70.1				
(S) 2-Fluorophenol				43.9	46.4	10.0-77.9				
(S) 2,4,6-Tribromophenol				84.0	95.6	11.2-130				

L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 14:48 • (MS) 05/15/1	5 15:11 • (MSD) 05/15/15 15:35										
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
1,4-Dichlorobenzene	0.500	ND	0.258	0.255	51.6	50.9	1	14.0-104			1.30	36.4
2,4-Dinitrotoluene	0.500	ND	0.342	0.401	68.5	80.1	1	16.2-135			15.7	20.6
Hexachlorobenzene	0.500	ND	0.379	0.435	75.8	87.0	1	31.9-135			13.8	20
Hexachloro-1,3-butadiene	0.500	ND	0.291	0.285	58.1	57.1	1	15.7-109			1.85	37.6
Hexachloroethane	0.500	ND	0.244	0.238	48.9	47.5	1	10.4-105			2.84	40
Nitrobenzene	0.500	ND	0.309	0.329	61.8	65.8	1	23.1-121			6.35	29
Pyridine	0.500	ND	0.124	0.127	24.8	25.4	1	10.0-77.8			2.61	38.8
2-Methylphenol	0.500	ND	0.262	0.289	52.4	57.8	1	10.0-133			9.89	40
3&4-Methyl Phenol	0.500	ND	0.293	0.321	58.6	64.1	1	17.4-100			9.10	27.7
Pentachlorophenol	0.500	ND	0.415	0.495	83.0	98.9	1	10.0-108			17.6	40
2,4,5-Trichlorophenol	0.500	ND	0.365	0.418	73.0	83.6	1	30.6-120			13.5	33.8
2,4,6-Trichlorophenol	0.500	ND	0.378	0.433	75.6	86.7	1	19.1-114			13.7	29.9
(S) Nitrobenzene-d5					58.4	64.6		21.8-123				
(S) 2-Fluorobiphenyl					61.8	68.0		29.5-131				
(S) p-Terphenyl-d14					55.8	63.0		29.3-137				
(S) Phenol-d5					29.4	31.9		5.00-70.1				
(S) 2-Fluorophenol					42.8	47.2		10.0-77.9				
(S) 2,4,6-Tribromophenol					90.1	108		11.2-130				

Sr

Qc

Gl

Тс

⁰Sc

SDG: L763904

GLOSSARY OF TERMS

1 1

Ср
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ AI
Q

Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	Estimated value.
Х	Surrogate recovery outside the control limit.

ACCREDITATIONS & LOCATIONS

Τс

Ss

Cn

Sr

ʹQc

Gl

Sc

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
llinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

^{1.} Drinking Water ^{2.} Underground Storage Tanks ^{3.} Aquatic Toxicity ^{4.} Chemical/Microbiological ^{5.} Mold ^{n/a} Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA-Crypto	TN00003	USDA	S-67674

Our Locations

ARCADIS US - TX

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



L763904

06/02/15 14:46

TX001155.0000

			Billing Information:				Analysis / Container / Preservative							Chain of Custody Page of			
ARCADIS US - TX 2929 Briarpark Dr., Suite 300 Houston, TX 77042			Attn: Accounts Payable 630 Plaza Drive, Suite 600 Highlands Ranch, CO 80129						An	naiysis /	Contain		ariag		L:A-B	E	
Report to:			Email To: @arcadis-us.com											12065 Lebano Mount Juliet, Phone: 615-75	TN 37122		
Project Manager	100					-51	100			1					Phone: 800-76 Fax: 615-758-	7-5859	2023
roject Description: Navajo Refining Company - Artesia, NM				City/State Collected: Ar	-teria /N	NM		res	KP KP					L# 1763 904			
Phone: 713-953-4800 Fax:	TX000836	Client Project # TX000835:0008-30004 TX001155.000 0			Lab Project # ARCADHTX-NAVAJO			- P/H 16ozClr-NoPres	CXATTIDE Soccle Hofters	8270, LEAD 402CH NoPres					Table	F	065
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Tank 815 5. Pro 4		TCLP		5/7/15	9:40	3	*	X	×	*						1	103
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SUSANA MARTINEZ Governor JOHN A. SANCHEZ Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.env.nm.gov



RYAN FLYNN Cabinet Secretary BUTCH TONGATE Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C. P.O. Box 159 Artesia, New Mexico 88211-0159

RE: DENIAL "NO LONGER CONTAINED-IN" DETERMINATION FOR CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY EPA ID# NMD048918817 HWB-NRC-MISC

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Characterization of Soil Excavated from Tank 815 Release*, dated July 23, 2015. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

S. M. Denton August 4, 2015 Page 2 of 2

The excavated soil meets New Mexico's residential soil screening levels (SSLs) for all analytes with the exception of benzo(a)anthracene and benzo(a)pyrene. However, benzo(a)anthracene and benzo(a)pyrene are below the industrial SSLs. Although the excavated soil is not a characteristically hazardous waste per 40 CFR Part 261 Subpart C, it is a K-Listed waste because chrysene and pyrene exceed the hazardous constituent standards as defined in Part 268.2(i) of the Land Disposal Restriction (LDR) Treatment Standards listed in 40 CFR Part 268.48 regulatory limits.

NMED has reviewed the Permittee's request and has determined that the excavated soil is a hazardous waste and does not meet applicable LDR standards. NMED hereby denies the Permittee's request for a "no longer contained-in" determination and must manage the excavated soil as hazardous waste and dispose of the excavated soil at an appropriate facility.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

UL Sa

John E. Kieling Chief Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC



Attachment D Waste Manifests

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Plea	se print or type. (Form designed for use on elite (12-pitch) typewriter.)					Form A	Approved. OM	IB No. 2050-0039
	UNIFORM HAZARDOUS 1. Generator ID Number WASTE MANIFEST NMDD/48918817	1 800	cy Response Pl)-424-93(XX			2034	JJK
	5. Generator's Name and Mailing Address Navajo Refining Co., L.L.C. (Artesia	Generator's	Site Address (if o lavajo Rei	different than main in the second s	iling address)			· · · · · ·
	P.O. Box 159 Artesia, NM 88211-0159	•	•	in A 88210				
	Generator's Phone: 575-748-3311		nesia, m					
	6. Transporter 1 Company Name Fluid Transports, INC			U.: 	S, EPA ID Nur		XD98805	7931
	7. Transporter 2 Company Name			U.s	3. EPA ID Nur	nber	_	
	Eluid Transport 8. Designated Facility Name and Site Address U.S. Ecology Texas, Inc.				S. EPA ID Nur	7 <u>x</u> C	<u> 9880</u>	57931
	3277 County Road 69			0.	5. El 700 Mul		XD06945	2340
	800-242-3209-116 Robstown, TX 78380 USA	· .		I				
	Facility's Phone: 98. 9a. 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shipping Name, Hazard Class, ID Number, and Dackies Come (including Proper Shippin		10. Container	''		12. Unit		te Codes
	HM and Packing Group (if any)) ^{1.} RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, Pe	c. 111	No.	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	tantity '	Wt,/Vol,	K048	KO49 KO51
GENERATOR	(K048, K049, K051 & K052 Impacted Soil)	C3 111	1	CM 2:	2580	P -	K052	OUT 4891
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	4.							
						S		
	14. Special Handling Instructions and Additional Information					,		
	1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402 Material passed TCLP but may contain legacy K listed wastes		•					
	Unit 8 Tank 815 NCL Impacted Soll Bin WL 7, 840	£33.00 at	53					
	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consign	ment are fully and	accurately descri					
	marked and labeled/placarded, and are in all respects in proper condition for transport according to Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA A	cknowledgment of (Consent.	•		export ship	ment and I am t	he Primary
	I cartify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quanti Generator's/Offeror's Printed/Typed Name	ty generator) or (b) Signature	(if I am a small q	uantity generato	r) is true.		Month	Day Year
<u> </u>	3 31NE CRAZERAS	BEN	we C	and	EAD	<u> </u>	8	14 15
E	164Hternational Shipments Import to U.S. Export Transporter signature (for exports only):	from U.S.	Port of entry/ Date leaving					
<u> </u>	17. Transporter Acknowledgment of Receipt of Materials				/			
TRANSPORTER	Transporter 1 Printed/Typed Name	Signature	1. 1	al Th	The ser	/	Month	Day Year
NSP	Transporter 2 Printed/Typed Name	Signature	4)	-	Month	Day Year
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1	18. Discrepancy 18a. Discrepancy Indication Space							
	Tal. Discrepancy indication Space Quantity Type		Residue	ا	Partial Reject	lion	L]	Full Rejection
 ≻	18b. Alternate Facility (or Generator)	Manif	est Reference N		S. EPA ID Nur	nber		
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¥	Facility's Phone:						L 14	Day Vere
ATEC	18c. Signature of Alternate Facility (or Generator)						Month	Day Year
DESIGNATED FACILITY	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, d	isposal, and recycli	ng systems)			· · · · ·	l	
<u>ا</u> بر	1. 1/1329 2.	3.			4.			
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the	a manifest except a	s noted in Item 1	8a	<u> </u>			. ·
	Printed/Typed Name	Signalure	11				Month	Day Year
	Form 8700-22 (Rev. 3-05) Previous editions are obsolete.					TIMI -	8	<u> /》 /)</u>
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UN	NIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Nu	umber)4891881		2. Page	80	rgency Response 10-424-931	00		830	203	5 J.	JK
	Generator's Name and Maili enerator's Phone: 575-7	Nava P.O. Artes	Roy 159	y Co., L.L.C 3211-0159	:. (Artesia)		ors Site Address Navajo Re 501 E. Ma Artesia, N	-	an mailing address	5)			
Gei 6.1	enerator's Phone: Transporter 1 Company Nar	ne							U.S. EPÁ ID N	umber """	XD9880	67024	
			nsports, It	VC							A <i>D8</i> 000	FG 7 6767 T	
7.1	Transporter 2 Company Nar	ne							U.S. EPA ID N	umber			
	Designated Facility Name a	nd Site Address 2-3209-116	3277 C	xology Texa county Road wn, TX 783	69				U.S. EPA ID N		XD0694	152340	
9a	a. 9b, U.S. DOT Descrip		er Shipping Name	, Hazard Class, ID	Number,		10. Contai	ners	11. Total	12. Unit	13.	Waste Code	s
н		• * *				### #	_No.	Туре	Quantity	Wt./Vol.	K048	K049	T KI
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	se print or type. (Form designed for use on elite (12-pitch) typewriter.) UNIFORM HAZARDOUS UNIFORM HAZARDOUS MMD048918817	2. Page 1 of	3. Emergency Response 800-424-93		4. Manifest	Fracking N	n Approved. umber 203		
 -	5. Generator's Name and Mailing Address Navajo Refining Co., L.L.C. (Art P.O. Box 159	tesia)	Generator's Site Address	if different the			<u> </u>		
	Artesia, NM 88211-0159		501 E. M Artesia, N	ล่ก					
	Generator's Phone: 575-748-3311 6. Transporter 1 Company Name		PHICISHA, IN	anal cycys.	U.S. EPAID N	umber			
	Fluid Transports, INC					T	XD9880)57931	
	7. Transporter 2 Company Name Fluid Trasport	SIT	NC		U.S. EPAID N	um <u>ber</u> T	้ กๆ	ঠঠ০	5793
	8. Designated Facility Name and Site Address U.S. Ecology Texas, Inc 3277 County Road 69	ni. Afg			U.S. EPA ID N		VINCO	12743 AM	
	Facility's Phone: 800-242-3209-116 Robstown, TX 78380 L	JSA					XD069/	1020AU	F
	9a. 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, HM and Packing Group (if any))		10. Contai No.	1	11. Total Quantity	12, Unit Wt./Vol.	13, 1	Waste Code	s
Ц Ц	X ^{1.} RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9	9. PG III	NO.	Туре	Guanary	<u>р</u>	K048	K049	K05
GENERATOR	(K048, K049, K051 & K052 Impacted Soil)	,	1	CM	18,900	P*	K052	OUT	489H
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	14. Special Handling Instructions and Additional Information	di		·	· · · · · ·				
	 1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15- Material passed TCLP but may contain legacy K listed was 			· · ·					
	Unit 8 Tank 815 NCL Impacted Soll Bin Wt. 7, 9	2∞ ^{Bir}	49						
	 GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this marked and labeled/placarded, and are in all respects in proper condition for transport acco 	ording to applica	ble international and nati						
	Exporter, I certify that the contents of this consignment conform to the terms of the attached I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large	e quantity gener	rator) or (b) (if I am a sma	all quantity ger	nerator) is true.	••••••			
	Generator's/Offeror's Printed/Typed Name	Signa		C	ades	lac	Mon	th Day	Year
1	16. International Shipments Import to U.S.	Export from U.		-		<i>y</i>			×
ER.	Transporter signature (for exports only): 17. Transporter Acknowledgment of Receipt of Materials		Date leavi	ing U.S.:					
TRANSPORTER INT'L	Transporter 1'Printed/Typed Name	Signa	ature				Mon I Č	- · ·	Year
ANSF	Florentro Saavedra	Signa	ature				Mon	th Day	Year
<u>₩</u>	BUBER Villa		<u> </u>	()=			0	8/14	<u>IB</u>
:	18a. Discrepancy Indication Space Quantity Type	·	Residue		Partial Reje	clion	[Full Reje	ection
			Manifest Reference	Number:					
ШТ	18b. Alternate Facility (or Generator)				U.S. EPA ID N	umber			
FAC	Facility's Phone:								
DESIGNATED FACILITY	18c. Signature of Alternate Facility (or Generator)						Moi	nth Day	Year
SIGN	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatr	ment, disposal,	and recycling systems)		·····		I		L
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	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered Printed/Typed Name	ed by the manife Signa		n 18a	<u> </u>		Mor	th Day	Year
\downarrow	Adria Villan		An	Var	OL	2		7 2	7 15
ED.	Form 8700-22 (Rev. 3-05). Previous editions are obsolete	6					v		

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

C

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)



Attachment E Final C-141

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

	OPERATOR		Initial Report	\boxtimes	Final Report
Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs				
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382				
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refiner	у			

Surface Owner: Navajo Refining Company,	Mineral Owner N/A	API No. N/A
L.L.C.		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude_Longitude__32.852260°/-104.395653°

NATURE OF RELEASE

Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Re	covered: 30 bbls
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence:	Date and H	our of Discovery: 04/16/15
	04/16/15, Unknown time	6:30 am	5 2 7
Was Immediate Notice Given?	If YES, To Whom?		
🛛 Yes 🗌 No 🗌 Not Required	NM Oil Conservation Division San	nta Fe– Left n	nessage to Carl Chavez
2000 STOR	NMED Hazardous Waste Bureau -	Left message	e to Leona Tsinnajinnie
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 -	15:00	
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	ercourse.	
🗌 Yes 🖾 No	N/A		
If a Watercourse was Impacted, Describe Fully.*			
N/A			
Describe Cause of Problem and Remedial Action Taken.* The water col	laction sump from T 815 quarflowed	during routin	a downstaning of the tank. The
water draw valve was immediately closed upon discovery and a vacuum t	ruck was cont to recover one free liqui	da Tha maaa	e dewatering of the tank. The
the crude process.	ruck was sent to recover any free fiqu	us. The feed	verea inquitas were returned to
Describe Area Affected and Cleanup Action Taken.*			
Pooled liquids were removed by vacuum truck and absorbent pads were u	sed to remove remaining hydrocarbon	s Stained so	il was removed to a depth of
approximately 12 inches and was placed into three covered, lined roll-off	containers The excavated area was h	ackfilled with	clean soil from an off-site
source and graded to match the surrounding area. Representative samples			
of the impacted soil from the spill will be collected in roll-off bins and cha	aracterized for disposal. The three rol	l-off bins wer	re transported to U.S. Ecology
Inc. in Robstown, Texas and disposed as hazardous waste.	and the second		e a anoported to 0.5. Leonogy,
, 1			
I hereby certify that the information given above is true and complete to the	he best of my knowledge and understa	nd that pursu	ant to NMOCD rules and
regulations all operators are required to report and/or file certain release n			
public health or the environment. The acceptance of a C-141 report by the	e NMOCD marked as "Final Report"	does not relie	ve the operator of liability
should their operations have failed to adequately investigate and remediat	e contamination that pose a threat to g	round water,	surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 report d	oes not relieve the operator of response	sibility for con	mpliance with any other
federal, state, or local laws and/or regulations.		11722	
1111	OIL CONSERV	ATION I	DIVISION
Signature: MMM			
	Approved by Environmental Specialis	st:	
Printed Name: Robert Combs			
Title: Environmental Specialist	Approval Date:	Expiration D	ate:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached
Date: 1/28/16 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, January 08, 2016 4:24 PM
То:	Chavez, Carl J, EMNRD
Cc:	Denton, Scott; Tsinnajinnie, Leona, NMENV
Subject:	Update on Hydrocarbons to surface of Eagle Draw Part 1 of 2
Attachments:	2016-01-08 Update on Hydrocarbons to surface of Eagle Draw 1 of 2.pdf

Carl,

On behalf of Scott Denton, please see the attached report that was prepared based on your comments to our initial notification. We have included surface sample results as well as a local monitor well (MW-55), a comparison table to present analytical results, precipitation data, and groundwater elevations for select wells in the area (NMED-HWB request). The submittal is in two parts; this email will be followed by the second portion. I will upload these to the OCD FTP server and send the path to you.

Please let me know if you have any questions or would like to discuss further.

Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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January 8, 2016

Submitted by electronic mail

Mr. Carl Chavez, Environmental Engineer New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive Santa Fe, NM 87505

RE: C-141 Report on Seepage into Eagle Draw Discharge Permit GW-028

Dear Mr. Chavez:

On November 17, 2015, Navajo Refining Company, L.L.C. (Navajo) notified the Oil Conservation Division (OCD) and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) by telephone that Refinery personnel had observed evidence of the seepage of dark liquids through cracks in a concreted portion of the bank of Eagle Draw within the Refinery. Navajo also notified the National Response Center of this seepage the same day.

This report summarizes Navajo's actions taken to date regarding the seepage, including the measures summarized in your electronic mail of November 17, 2015, and proposed actions based upon our evaluation regarding the likely source of the seepage. Form C-141 is re-provided as Attachment A.

Refinery Setting

The location of the observed seepage along the bank of Eagle Draw is in the northwestern portion of the Refinery. Recovery well (RW) 17 is located on the west side of Eagle Draw, and due north of the observed seepage, and monitor well (MW)-55 is further to the northeast. The area of the seepage is within the Refinery's fenced boundaries. Attachment B provides Figure 1, which is the location of the seepage in relation to an overall Refinery map.

Actions Taken

At the time the incident was internally reported, Environmental Department personnel went out to inspect the seepage to develop an immediate course of action. There was no odor to the seepage itself, but the liquids expressing through cracks in the concrete sidewall appeared to be dark and featured entrained particulate matter. Absorbents were applied in order to remove as much stained material as possible. Although there was no sheen on the surface water in the Draw, field screening of ambient air over the surface water was conducted, but did not indicate

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Mr. Chavez January 8, 2016 Page 2

the presence of hydrogen sulfide or benzene. Notwithstanding the lack of hydrocarbon odor in the seepage or sheen on the water in the Draw, Navajo protectively placed oil absorbent booms downstream of the observed seepage locations, and booms will be replaced as needed.

Three water samples were collected on November 19, 2015 at the locations shown in Figure 2 (Attachment C). Two of the samples were collected from surface water: sample location ED01-111915 was very near the point where the seepage was observed within Eagle Draw, downstream of the confluence with Clark Draw. The second surface sample, ED02-111915, was collected further downstream within Eagle Draw east of Navajo Road, within the Refinery's fenceline.¹ At OCD's request for comparison purposes, a sample was also collected from monitoring well MW-55 (see Figure 2, Attachment C), which is screened from 13.7 to 23.7 feet below ground surface. The three samples, plus a trip blank for volatile organic compounds (VOC) analysis, were shipped overnight to a certified laboratory for analysis of the constituents requested by OCD (total petroleum hydrocarbons, general chemistry, VOCs, BTEX, and the eight RCRA metals).

The full set of analytes, associated screening levels, and analytical results are summarized in Table 1 (Attachment D), and a copy of the laboratory report (and the contractor's field notes) is provided as Attachment E. (The lab report erroneously identifies surface water sample ED02-111915 as "ED-1111915," as indicated by the markup on the report.) The lab report was also provided to you via electronic mail on December 21, 2015.

The analytical results from the groundwater sample and the two surface water samples were compared to the following screening levels:

- Upper tolerance limit (UTL) calculated for background concentrations of general chemistry parameters and mercury (from Navajo's background groundwater investigation report submitted to OCD and NMED in September 2015);
- Lower of the New Mexico Water Quality Control Commission (WQCC) Water Quality Standard (WQS) provided in 20.6.2.3103 New Mexico Administrative Code (NMAC) or the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for metals (other than mercury) and VOCs.
- TPH screening level provided in the 2012 version of the HWB risk assessment guidance document for TPH DRO and TPH ORO.
- Human Health Surface Water Quality Standards (SWQS)
- Aquatic Life SWQS

As Table 1 (Attachment D) indicates, the water quality of the two surface water samples is affected primarily by total petroleum hydrocarbons (TPH): Diesel Range Organics (DRO) and Oil Range Organics (ORO), even more so than levels in MW-55. The TPH and VOCs in ED02-

¹The coordinates of the ED01-111915 sample area are latitude 32.852356 and longitude 104.393864, while those of the ED02-111915 sample are latitude 32.852972 and longitude 104.393347.

Mr. Chavez January 8, 2016 Page 3

111955, the downstream surface water sample, are significantly lower than the sample collected nearest the seep, indicating that degradation of these compounds is occurring.

- MW-55: The reported concentration of TPH DRO exceeds the TPH screening level in the sample collected from MW-55. All other constituents of concern (COCs) were either not detected or were reported at concentrations below the screening levels.
- ED01-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected closest to the observed seep. The reported concentrations of arsenic and benzene exceed the EPA MCLs in the sample collected closest to the observed seep. The reported concentration of benzene exceeds the aquatic life chronic SWQS. All other COCs were either not detected or were reported at concentrations below the screening levels.
- ED02-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected on the downstream side of Navajo Road. The reported concentration of potassium exceeds the background UTL in this sample. All other COCs were either not detected or were reported at concentrations below the screening levels.

Evaluation and Recommendations

Navajo has observed higher than normal groundwater levels in the monitoring wells located in the northern portion of the Artesia Refinery during the past two years, most likely due to heavier than normal rainfall in the region during this period. Attachments F and G present the historic precipitation data for the area and ground elevation trends. We believe that impacted groundwater associated with a solid waste management unit and/or an area of contamination, which is being monitored and, in some cases, recovered through implementation of the Facility-Wide Ground Water Monitoring Program (FWGWMP), is the seepage liquid. The constituents of concern measured in the surface water samples appear to be consistent generally with results of recent FWGWMP events for the adjacent wells and recovery trenches.

In addition to the actions taken thus far, we propose the following:

- Conduct weekly inspections of the seepage area for the month of January 2016 to visually examine for additional seepage and potential sheens on surface water in Eagle Draw.
- As needed, apply absorbents to recover/remove any seepage.
- Ensure that booms are ready and serviceable to put into use in surface waters in Eagle Draw, as needed.
- Take and record water level elevations in RW-17A and RW-17G on a weekly basis during the month of January 2016 in order to evaluate fluctuations in levels in comparison to weather.

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- Operate RW-7 and RW-8 consistently during the month of January 2016 in order to reduce groundwater elevations.
- Repair the concrete fissures in this specific locale of Eagle Draw.

Should you have any questions about this notification report, please do not hesitate to contact me at (575) 746-5487 or <u>scott.denton@hollyfrontier.com</u>.

Sincerely,

Scott M. Denton Environmental Manager

c: Robert A. Combs, Artesia Refinery, Environmental Specialist Leona Tsinnajinnie, NMED HWB

Enclosures:

Attachment A – Form C-141

Attachment B – Figure 1 (Location of Seepage within the Refinery)

Attachment C – Figure 2 (Locations of November 19, 2015 Samples)

Attachment D – Table 1 (Analytical Results and Comparison Standards)

Attachment E – Analytical Lab Report with Contractor Field Notes

Attachment F - Precipitation Data January 2011 - November 2015

Attachment G - GW Level Trends

HollyFrontier Navajo Refining LLC 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u> Attachment A Form C-141 (Previously provided to OCD)

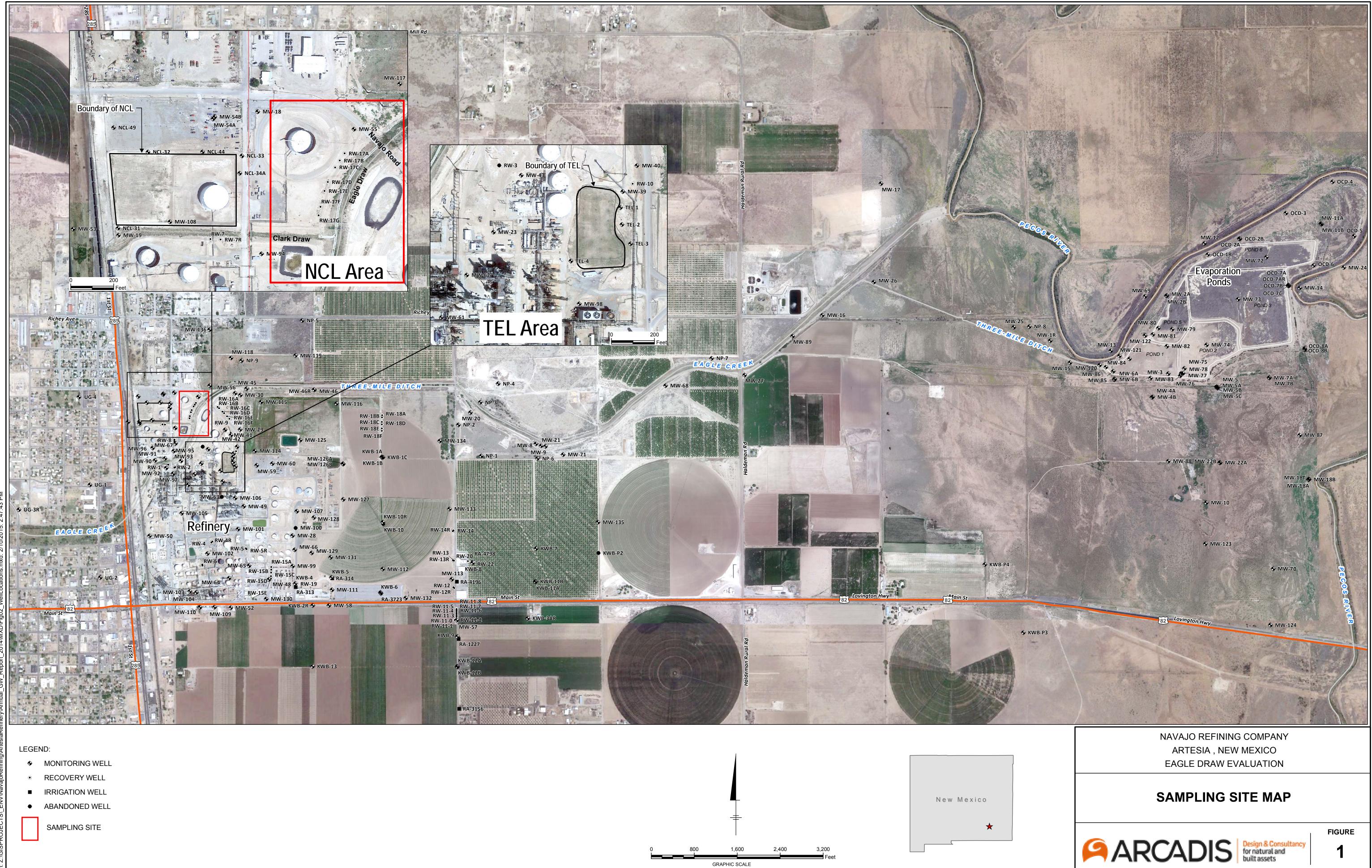
Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

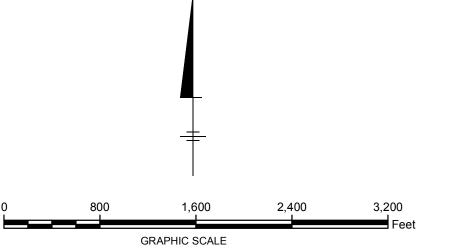
Release Notification	on and Co	orrective A	ction		
	OPERA		🛛 Init	ial Report 🔲 Final Report	
Name of CompanyNavajo Refining Company, L.L.C.Address501 E. Main St. Artesia, NM 88210		obert Combs	280		
Facility Name Navajo Refining Company, L.L.C. Artesia	-	No. 575-746-53 De Refinery	382		
Surface Owner Mineral Owner			API N	0.	
LOCATIO		LEASE			
Unit Letter Section Township Range Feet from the Nort	h/South Line	Feet from the	East/West Line	County	
Latitude	Longitu	de			
NATURI	E OF REL	EASE			
Type of Release: Visible evidence of hydrocarbons from groundwater	Volume of	Release		Recovered: N/A, Absorbent	
expressed at the ground surface due to elevated water table.	approxima	tely < 1 gallon		applied to recover/remove	
				bon staining from groundwater	
Source of Release Impacted groundwater		Hour of Occurrence	e Date and	l Hour of Discovery	
Was Immediate Notice Given?	12/2/15 U If YES, To	nknown hour	12/2/15@	@11:40 am	
Yes No Not Required	National R	esponse Center a	t 11:50 am		
		a Fe office at 4:50			
By Whom? Gabriela Combs/Robert Combs Was a Watercourse Reached?	Date and Hour please see above If YES, Volume Impacting the Watercourse.				
Yes 🗌 No	<1 gallon				
If a Watercourse was Impacted, Describe Fully.*	1				
A small area of stained concrete located at the base of Clark Draw and H	Eagle Draw.				
Describe Cause of Problem and Remedial Action Taken.* A hydrocart	on stained are	was discovered	hy Refinery perso	nnel in the base of Clark Draw	
on 12/2/15. There is not an active release of hydrocarbons from Refiner	y operations.	There is no hydro	ocarbon sheen pres	sent in the water. The impacts of	
groundwater extrusion are being addressed by removal of hydrocarbons downstream as a precautionary measure to prevent the potential for resid					
while the remedial action described below is being implemented.	iuai nydrocaro	ons to impact any	nowing condition	is in the water way that may arise	
Describe Area Affected and Cleanup Action Taken.*					
The stained area was confined to small, specific areas of the concrete. T separated hydrocarbons; if present, a vacuum truck will be used for the	he adjacent re text several da	covery trench will vs to remove any	l be monitored rou product collected	tinely for evidence of phase in the adjacent monitoring well	
			-	in the adjacent monitoring wen.	
A final C-141 report will be submitted to OCD and HWB once corrective	e actions, sam	ple results, etc. ar	e complete.		
I hereby certify that the information given above is true and complete to	the best of my	knowledge and u	inderstand that put	rsuant to NMOCD rules and	
regulations all operators are required to report and/or file certain release	notifications a	nd perform correc	ctive actions for re	leases which may endanger	
. public health or the environment. The acceptance of a C-141 report by a should their operations have failed to adequately investigate and remedi					
or the environment. In addition, NMOCD acceptance of a C-141 report					
federal, state, or local laws and/or regulations.			anna		
IAI Ko		<u>OIL CON</u>	SERVATION	DIVISION	
Signature: 10400 m					
/ Printed Name: Robert Combs	Approved by	Environmental S	pecialist:		
Title: Environmental Specialist	Approval Da	te:	Expiration	Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions o	f Approval:		Attached	
Data: 12/0/15					
Date: 12/8/15 Phone: 575-746-5382 Attach Additional Sheets If Necessary Image: Comparison of the state					

Attachment B

Figure 1 – Location of seepage within the Refinery

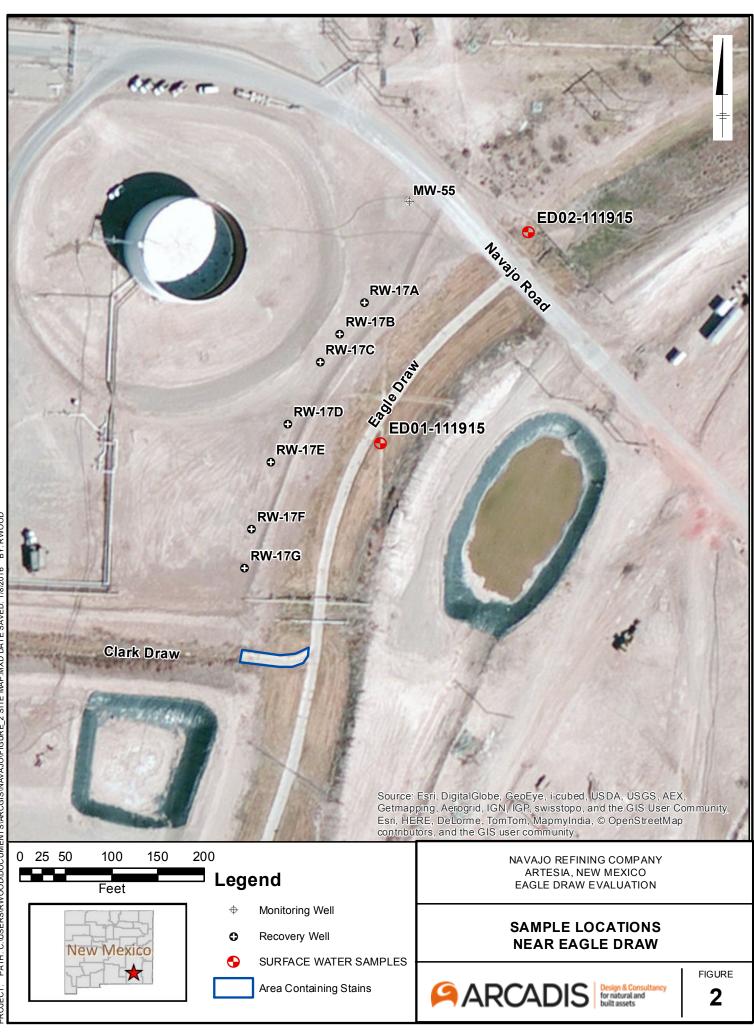


CITY: SF DIV/GROUP: ENV/IM DB: K Project (Project #) TX000836.0004.000 Path: Z:\GISPROJECTS\ ENV\Navaiol



Attachment C

Figure 2 – Locations of November 19, 2015 Samples



CITY:(HOUSTON) DIV/GROUP:(INF/GIS) LD:(V.PAOUNCIC) PIC:/PM:() TM:(R.WOOD) PROJECT: PATH: C:/USERSIRWOOD/DOCUMENTS/ARCGISI/NAVAJO/FIGURE_2 SITE MAP./MXD DATE SAVED: 1/8/2016 BY:RWOOD

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, January 08, 2016 4:24 PM
То:	Chavez, Carl J, EMNRD
Cc:	Denton, Scott; Tsinnajinnie, Leona, NMENV
Subject:	Update on Hydrocarbons to surface of Eagle Draw Part 1 of 2
Attachments:	2016-01-08 Update on Hydrocarbons to surface of Eagle Draw 1 of 2.pdf

Carl,

On behalf of Scott Denton, please see the attached report that was prepared based on your comments to our initial notification. We have included surface sample results as well as a local monitor well (MW-55), a comparison table to present analytical results, precipitation data, and groundwater elevations for select wells in the area (NMED-HWB request). The submittal is in two parts; this email will be followed by the second portion. I will upload these to the OCD FTP server and send the path to you.

Please let me know if you have any questions or would like to discuss further.

Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Attachment D

Table 1 – Analytical Results and Comparison Standards

Table 1. Analytical Results and Comparison Standards

			Human Health		Aquatic Life		MW-55	ED01-111915	ED02-1111915
Analyte	CGWSL	CGWSL Source	SWQS	Source	SWQS	Source	11/19/2015	11/19/2015	11/19/2015
General Chemistry (mg/L)								<u>.</u>	
Calcium	1030	Background							3 💷
Chloride	5930	Background	6,000	notes			225	580	452
Fluoride	2.95	Background					2.02	1.22	1.49
Nitrate/Nitrite	15.1	Background	132	LW			4.39	< 0.0197	0.041 J
Potassium	8.75	Background					0.989 J	5.59	9.33
Sodium	4300	Background					173 4	250	258
Sulfate	4410	Background	3,000	notes			2020	745	1470
TDS	16700	Background	14,000	notes			3480	2910	1890
Dissolved Metals (mg/L)								- -	
Arsenic	0.01	EPA MCL	0.009	HH-OO	0.15	AL - Cr	0.00553	0.0159	0.00785
Barium	1	WQCC HH	2	DWS			0.0105	0.0882	0.063
Cadmium	0.005	EPA MCL	0.01	Irr	0.00028	AL - Cr	< 0.00016	< 0.00016	< 0.00016
Chromium	0.05	WQCC HH	0.1	Irr	0.042	AL - Cr	0.00186 J	0.00109 J	0.00104 J
Lead	0.015	EPA MCL	0.1	LW	0.001	AL - Cr	0.000389 J	0.00143 J	0.00114 J
Mercury	0.0044	Background	0.01	LW	0.00077	AL - Cr	< 0.000049	< 0.000049	< 0.000049
Selenium	0.05	WQCC HH	0.05	LW	0.005	AL - Cr	0.00845	0.000532 J	0.00642
Silver	0.05	WQCC HH			0.001	AL - Ac	< 0.00031	< 0.00031	< 0.00031
Total Petroleum Hydrocarb	ons (mg/L)								
GRO							< 0.0314	1.38	0.0469 J
DRO	0.2	NMED TPH					0.356	7.21	2.19
ORO	0.2	NMED TPH					0.108	1.16	0.621
Volatile Organic Carbons (ng/L)								
Benzene	0.005	EPA MCL	0.51	HH-OO			< 0.00019	0.188	0.00285
Toluene	0.75	WQCC HH	15	HH-OO			< 0.00018	0.0192	0.000574 J
Ethylbenzene	0.7	EPA MCL	2.1	HH-OO			< 0.00016	0.0158	0.000669
Xylenes	0.62	WQCC HH					0.0013 J	0.131	0.00147 J

Notes:

The selected NMED surface water quality standards are based on the following designated uses, if available. Domestic water supply criteria are only used if there are no other criteria available. PERENNIAL WATERS - All perennial unclassified waters of the state.

A. Designated Uses: warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.

Hardness-dependent criteria for metals are based on a hardness of 50 mg/L.

For TDS, sulfate and chloride the criteria for the Pecos River Basin were used for comparison purposes:

PECOS RIVER BASIN - The main stem of the Pecos river from the headwaters of Brantley

reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state

highway 24 near Dunken, perennial reaches of the Rio Hondo and its tributaries below Bonney canyon and

perennial reaches of the Rio Felix.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, secondary contact and

warmwater aquatic life.

Criteria: At all flows above 50 cfs: TDS 14,000 mg/L or less, sulfate 3,000 mg/L or less and chloride 6,000 mg/L or less.

HH-OO	human health-organism only
Irr	irrigation
LW	livestock watering
DWS	domestic water supply
AL - Cr	aquatic life - chronic
AL - Ac	aquatic life - acute

Attachment E

Analytical Lab Report with Contractor Field Notes

Contact: Ron Wood, ARCADIS 713-953-4840



ANALYTICAL REPORT December 02, 2015



ARCADIS US - TX

Sample Delivery Group: Samples Received: Project Number: Description:

L802348 11/20/2015 TX001155.0001.00003 Navajo Refining Company - Artesia, NM

Report To:

Pam Krueger 2929 Briarpark Dr., Suite 300 Houston, TX 77042

Entire Report Reviewed By: Chu, for

Chris McCord Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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*	

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Cn

Sr

Qc

GI

ΆI

Sc

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

Received date/time

11/20/15 09:00

Collected date/time 11/19/15 13:10 Ср

Тс

Ss

Cn

Sr

Qc

Gl

Â

Sc

MW-55 L802348-01 GW			Collected by	Collected date/time 11/19/15 10:30	Received date/time 11/20/15 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:03	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 14:44	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:18	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 18:45	11/22/15 18:45	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:19	11/30/15 16:19	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:13	11/24/15 15:13	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 15:59	11/24/15 15:59	DJD

ED01-111915 L802348-02 GW			Collected by	Collected date/time 11/19/15 12:45	Received date/time 11/20/15 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:06	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 15:54	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:35	BJF
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	5	11/20/15 23:39	11/25/15 08:23	JNS
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:10	11/22/15 19:10	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:21	11/30/15 16:21	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:28	11/24/15 15:28	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:16	11/24/15 16:16	DJD

ED-1111915 L802348-03 GW

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:08	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 16:01	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:53	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:35	11/22/15 19:35	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:22	11/30/15 16:22	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:43	11/24/15 15:43	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:31	11/24/15 16:31	DJD
			Collected by	Collected date/time	Received date/time
TRIP BLANK L802348-04 GW				11/19/15 13:10	11/20/15 09:00

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC) by Method 8021B	WG830660	1	11/22/15 17:29	11/22/15 17:29	BMB

Collected by

CASE NARRATIVE

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord Technical Service Representative

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE RESULTS - 01 L802348



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Gravimetric Analysis by Method 2540 C-2011

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	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	CP
Analyte	ug/l		ug/l	ug/l		date / time		2
Dissolved Solids	3480000		2820	10000	1	11/25/2015 17:16	WG831418	Tc

Wet Chemistry by Method 353.2

Wet Chemistry	y by Method 3	353.2						Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		⁴ Cn
Nitrate-Nitrite	4390		19.7	100	1	11/30/2015 16:19	WG832327	

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	225000		2600	50000	50	11/24/2015 15:59	WG830779
Fluoride	2020		9.90	100	1	11/24/2015 15:13	WG830779
Sulfate	2020000		3870	250000	50	11/24/2015 15:59	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:03	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l	qualifier	ug/l	ug/l	Bildton	date / time	Batch
Arsenic, Dissolved	5.53		0.250	2.00	1	11/24/2015 14:44	WG831296
Barium, Dissolved	10.5		0.360	5.00	1	11/24/2015 14:44	WG831296
Cadmium, Dissolved	U		0.160	1.00	1	11/24/2015 14:44	WG831296
Calcium, Dissolved	447000	4	46.0	1000	1	11/24/2015 14:44	WG831296
Chromium, Dissolved	1.86	J	0.540	2.00	1	11/24/2015 14:44	WG831296
Lead, Dissolved	0.389	J	0.240	2.00	1	11/24/2015 14:44	WG831296
Potassium, Dissolved	989	J	37.0	1000	1	11/24/2015 14:44	WG831296
Selenium, Dissolved	8.45	_	0.380	2.00	1	11/24/2015 14:44	WG831296
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 14:44	WG831296
Sodium, Dissolved	173000	4	110	1000	1	11/24/2015 14:44	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 18:45	<u>WG830660</u>
Toluene	U		0.180	5.00	1	11/22/2015 18:45	<u>WG830660</u>
Ethylbenzene	U		0.160	0.500	1	11/22/2015 18:45	<u>WG830660</u>
Total Xylene	1.30	J	0.510	1.50	1	11/22/2015 18:45	<u>WG830660</u>
TPH (GC/FID) Low Fraction	U		31.4	100	1	11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(Fl	D) 94.9			62.0-128		11/22/2015 18:45	<u>WG830660</u>
(S) a,a,a-Trifluorotoluene(Pl	D) 101			55.0-122		11/22/2015 18:45	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	356		22.2	100	1	11/21/2015 18:18	WG830634
C28-C40 Oil Range	108		11.8	100	1	11/21/2015 18:18	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:18	WG830634

ACCOUNT:	PROJECT:	SDG:	
ARCADIS US - TX	TX001155.0001.00003	L802348	

SAMPLE RESULTS - 02 L802348



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Gravimetric Analysis by Method 2540 C-2011

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	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Cp	
Analyte	ug/l		ug/l	ug/l		date / time		2	ī
Dissolved Solids	2910000		2820	10000	1	11/25/2015 17:16	WG831418	Tc	

Wet Chemistry by Method 353.2

Wet Chemistry by Method 353.2									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	ug/l		ug/l	ug/l		date / time			4 Cn
Nitrate-Nitrite	U		19.7	100	1	11/30/2015 16:21	WG832327		

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	580000		2600	50000	50	11/24/2015 16:16	WG830779
Fluoride	1220		9.90	100	1	11/24/2015 15:28	WG830779
Sulfate	745000		3870	250000	50	11/24/2015 16:16	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:06	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Arsenic, Dissolved	15.9		0.250	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Barium, Dissolved	88.2		0.360	5.00	1	11/24/2015 15:54	<u>WG831296</u>	
Cadmium, Dissolved	U		0.160	1.00	1	11/24/2015 15:54	<u>WG831296</u>	
Calcium, Dissolved	420000		46.0	1000	1	11/24/2015 15:54	<u>WG831296</u>	
Chromium, Dissolved	1.09	J	0.540	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Lead, Dissolved	1.43	J	0.240	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Potassium, Dissolved	5590		37.0	1000	1	11/24/2015 15:54	<u>WG831296</u>	
Selenium, Dissolved	0.532	J	0.380	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Sodium, Dissolved	250000		110	1000	1	11/24/2015 15:54	<u>WG831296</u>	

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	188		0.190	0.500	1	11/22/2015 19:10	<u>WG830660</u>
Toluene	19.2		0.180	5.00	1	11/22/2015 19:10	<u>WG830660</u>
Ethylbenzene	15.8		0.160	0.500	1	11/22/2015 19:10	WG830660
Total Xylene	131		0.510	1.50	1	11/22/2015 19:10	<u>WG830660</u>
TPH (GC/FID) Low Fraction	1380		31.4	100	1	11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(Fl	D) 97.6			62.0-128		11/22/2015 19:10	<u>WG830660</u>
(S) a,a,a-Trifluorotoluene(Pl	D) 104			55.0-122		11/22/2015 19:10	<u>WG830660</u>

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	7210		111	500	5	11/25/2015 08:23	WG830634
C28-C40 Oil Range	1160		11.8	100	1	11/21/2015 18:35	<u>WG830634</u>
(S) o-Terphenyl	120			50.0-150		11/21/2015 18:35	WG830634

ACCOUNT:	
ARCADIS US - TX	

PROJECT: TX001155.0001.00003

SDG: L802348

DATE/TIME: 12/02/15 10:19

SAMPLE RESULTS - 03 L802348



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Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l	ug/l		date / time		2
Dissolved Solids	1890000		2820	10000	1	11/25/2015 17:16	<u>WG831418</u>	Tc

Wet Chemistry by Method 353.2

Wet Chemistry by Method 353.2									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	ug/l		ug/l	ug/l		date / time			4 Cn
Nitrate-Nitrite	41.0	J	19.7	100	1	11/30/2015 16:22	WG832327		CII

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	452000		2600	50000	50	11/24/2015 16:31	WG830779
Fluoride	1490		9.90	100	1	11/24/2015 15:43	WG830779
Sulfate	1470000		3870	250000	50	11/24/2015 16:31	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:08	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic, Dissolved	7.85		0.250	2.00	1	11/24/2015 16:01	WG831296
Barium, Dissolved	63.0		0.360	5.00	1	11/24/2015 16:01	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 16:01	WG831296
Calcium, Dissolved	377000		46.0	1000	1	11/24/2015 16:01	WG831296
Chromium,Dissolved	1.04	J	0.540	2.00	1	11/24/2015 16:01	WG831296
ead, Dissolved	1.14	J	0.240	2.00	1	11/24/2015 16:01	WG831296
otassium,Dissolved	9330		37.0	1000	1	11/24/2015 16:01	WG831296
Selenium, Dissolved	6.42		0.380	2.00	1	11/24/2015 16:01	WG831296
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 16:01	WG831296
Sodium, Dissolved	258000		110	1000	1	11/24/2015 16:01	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	2.85		0.190	0.500	1	11/22/2015 19:35	WG830660
Toluene	0.574	J	0.180	5.00	1	11/22/2015 19:35	WG830660
Ethylbenzene	0.669		0.160	0.500	1	11/22/2015 19:35	WG830660
Total Xylene	1.47	J	0.510	1.50	1	11/22/2015 19:35	WG830660
TPH (GC/FID) Low Fraction	46.9	J	31.4	100	1	11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(Fi	ID) 94.5			62.0-128		11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(P	ID) 99.6			55.0-122		11/22/2015 19:35	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	2190		22.2	100	1	11/21/2015 18:53	<u>WG830634</u>
C28-C40 Oil Range	621		11.8	100	1	11/21/2015 18:53	<u>WG830634</u>
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:53	WG830634

ACCOUNT:	
ARCADIS US - TX	

PROJECT: TX001155.0001.00003

SDG: L802348

DATE/TIME: 12/02/15 10:19

SAMPLE RESULTS - 04

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Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		2
Benzene	U		0.190	0.500	1	11/22/2015 17:29	WG830660	Tc
Toluene	U		0.180	5.00	1	11/22/2015 17:29	WG830660	
Ethylbenzene	U		0.160	0.500	1	11/22/2015 17:29	WG830660	³Ss
Total Xylene	U		0.510	1.50	1	11/22/2015 17:29	WG830660	55
(S) a,a,a-Trifluorotolu	iene(PID) 101			55.0-122		11/22/2015 17:29	<u>WG830660</u>	⁴ Cn

WG831418

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 11/25/15 17:16				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/25/15 17:16 • (DUP) 11/25/15	5 17:16					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	3480	3590	1	3.26		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/25/15 17:16 • (LCSD) 11/25/	/15 17:16									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8720	8610	99.1	97.8	85.0-115			1.27	5

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Wet Chemistry by Method 353.2

QUALITY CONTROL SUMMARY L802348-01,02,03

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Method Blank (MB)

(MB) 11/30/15 16:08				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:19 • (DUP) 11/30/15	16:20					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	4.39	4.34	1	1.00		20

L802480-01 Original Sample (OS) • Duplicate (DUP)

L802480-01 Original Sar		Duplicate	(DOP)				7 Cl
(OS) 11/30/15 16:36 • (DUP) 11/30/15	16:37						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		%	⁸ Al
Nitrate-Nitrite	0.162	0.157	1	3.00		20	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/30/15 16:11 • (LCSD) 11/30/1	15 16:12									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate-Nitrite	5.00	4.73	4.82	95.0	96.0	90.0-110			2.00	20

L802392-01 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/30/15 16:23 • (MS) 11/30/15	16:24						
	Spike Amou	unt Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Nitrate-Nitrite	5.00	1.93	6.97	101	1	90.0-110	

DATE/TIME: 12/02/15 10:19

Wet Chemistry by Method 353.2

QUALITY CONTROL SUMMARY

L802480-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/30/15 16:39 • (MS) 11/30/15	16:40 • (MSE	0) 11/30/15 16:41										
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Nitrate-Nitrite	5.00	6.08	11.0	11.0	98.0	98.0	1	90.0-110			0.000	20



ACCOUNT: ARCADIS US - TX PROJECT: TX001155.0001.00003 SDG: L802348 DATE/TIME: 12/02/15 10:19

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WG830779

Wet Chemistry by Method 9056MOD

QUALITY CONTROL SUMMARY

(MB) 11/24/15 07:42				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	0.0916		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L801979-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 10:51 • (DUP) 11/24	/15 11:06					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	79.7	79.7	10	0		20
Fluoride	0.491	0.496	10	1		20
Sulfate	422	422	10	0		20

L802323-07 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 14:26 • (DUP) 11/24/1	5 14:42					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	36.4	36.4	10	0		20
Fluoride	0.261	0.248	10	5		20
Sulfate	110	109	10	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 07:58 • (LCSD) 11/24	/15 08:13									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Chloride	40.0	39.8	39.9	100	100	90-110			0	20
Fluoride	8.00	7.98	7.99	100	100	90-110			0	20
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20

ACCOUNT:
ARCADIS US - TX

PROJECT: TX001155.0001.00003 SDG: L802348 DATE/TIME: 12/02/15 10:19

PAGE: 12 of 23

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Wet Chemistry by Method 9056MOD

QUALITY CONTROL SUMMARY

RPD Limits

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L801999-04 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/24/15 11:21 • (MS) 11/24/15 11:37

Chloride 5.00 378 862 97 10 80-120 Fluoride 0.500 0.668 50.8 100 10 80-120		()							
Chloride 5.00 378 862 97 10 80-120 Fluoride 0.500 0.668 50.8 100 10 80-120			Spike Amou	nt Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
luoride 0.500 0.668 50.8 100 10 80-120	Analyte		mg/l	mg/l	mg/l	%		%	
	Chloride		5.00	378	862	97	10	80-120	
Sulfate 5.00 207 691 97 10 80-120	Fluoride		0.500	0.668	50.8	100	10	80-120	
	Sulfate		5.00	207	691	97	10	80-120	

L802323-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 13:40 • (MS) 11/24/1	5 13:55 • (MS	D) 11/24/15 14:11									
	Spike Amo	unt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%
Chloride	5.00	17.2	509	509	98	98	10	80-120			0
Fluoride	0.500	0.424	50.7	50.9	101	101	10	80-120			0
Sulfate	5.00	539	1030	1030	97	97	10	80-120			0

ACCOUNT: ARCADIS US - TX SDG: L802348 DATE/TIME: 12/02/15 10:19

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WG830678

Mercury by Method 7470A

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 11/22/15 10:19				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury, Dissolved	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 10:22 • (LCSD) 11/22/15 10:24												
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits		
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%		
Mercury, Dissolved	0.00300	0.00260	0.00245	87	82	80-120			6	20		

L802534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 10:46 • (MS) 11/22/15 10:48 • (MSD) 11/22/15 10:51												
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury, Dissolved	0.00300	0.00000972	0.00281	0.00285	93	95	1	75-125			2	20

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Metals (ICPMS) by Method 6020

QUALITY CONTROL SUMMARY

(MB) 11/24/15 15:33				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Arsenic,Dissolved	U		0.00025	0.00200
Barium, Dissolved	U		0.00036	0.00500
Cadmium,Dissolved	U		0.00016	0.00100
Calcium, Dissolved	U		0.046	1.00
Chromium,Dissolved	0.000714		0.00054	0.00200
Lead, Dissolved	0.000284		0.00024	0.00200
Potassium, Dissolved	0.0441		0.037	1.00
Selenium,Dissolved	U		0.00038	0.00200
Silver, Dissolved	U		0.00031	0.00200
Sodium,Dissolved	U		0.11	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 14:39 •	(LCSD) 11/24/15 14:41
------------------------	-----------------------

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Arsenic,Dissolved	0.0500	0.0528	0.0503	106	101	80-120			5	20
Barium, Dissolved	0.0500	0.0490	0.0501	98	100	80-120			2	20
Cadmium, Dissolved	0.0500	0.0556	0.0519	111	104	80-120			7	20
Calcium, Dissolved	5.00	4.91	5.19	98	104	80-120			6	20
Chromium, Dissolved	0.0500	0.0530	0.0517	106	103	80-120			3	20
Lead, Dissolved	0.0500	0.0507	0.0503	101	101	80-120			1	20
Potassium, Dissolved	5.00	4.87	4.97	97	99	80-120			2	20
Selenium,Dissolved	0.0500	0.0506	0.0509	101	102	80-120			1	20
Silver, Dissolved	0.0500	0.0510	0.0511	102	102	80-120			0	20
Sodium,Dissolved	5.00	5.34	5.68	107	114	80-120			6	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55														
	Spike Amou	pike Amount Original Result MS		Amount Original Result MS Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	Rec. Limits MS Qualifier		RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%		
Arsenic, Dissolved	0.0500	0.00553	0.0603	0.0619	110	113	1	75-125			3	20		
Barium, Dissolved	0.0500	0.0105	0.0589	0.0601	97	99	1	75-125			2	20		
Cadmium, Dissolved	0.0500	0.0000293	0.0546	0.0559	109	112	1	75-125			2	20		

ACCOUNT:							
ARCADIS US - TX							

PROJECT: TX001155.0001.00003 SDG: L802348 DATE/TIME: 12/02/15 10:19

PAGE: 15 of 23 ¹Cp

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Metals (ICPMS) by Method 6020

QUALITY CONTROL SUMMARY

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L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

	·	·										
	Spike Amou	int Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Calcium,Dissolved	5.00	447	437	438	0	0	1	75-125	4	4	0	20
Chromium, Dissolved	0.0500	0.00186	0.0507	0.0504	98	97	1	75-125			0	20
Potassium, Dissolved	5.00	0.989	5.49	5.45	90	89	1	75-125			1	20
Lead, Dissolved	0.0500	0.000389	0.0483	0.0490	96	97	1	75-125			1	20
Selenium, Dissolved	0.0500	0.00845	0.0591	0.0591	101	101	1	75-125			0	20
Silver, Dissolved	0.0500	0.000110	0.0490	0.0493	98	98	1	75-125			1	20
Sodium, Dissolved	5.00	173	173	176	0	55	1	75-125	4	4	2	20

SDG: L802348 DATE/TIME: 12/02/15 10:19

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WG830660

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

QUALITY CONTROL SUMMARY

(MB) 11/22/15 17:03					
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	mg/l		mg/l	mg/l	-
Benzene	U		0.000190	0.000500	
Toluene	0.000458		0.000180	0.00500	3
Ethylbenzene	U		0.000160	0.000500	
Total Xylene	U		0.000510	0.00150	4
TPH (GC/FID) Low Fraction	U		0.0314	0.100	
(S) a,a,a-Trifluorotoluene(FID)	95.4			62.0-128	
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122	5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:00 • (LCSD) 11/2	22/15 15:25									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0500	0.0487	0.0487	97.5	97.4	70.0-130			0.0400	20
Toluene	0.0500	0.0452	0.0446	90.4	89.2	70.0-130			1.40	20
Ethylbenzene	0.0500	0.0471	0.0467	94.3	93.4	70.0-130			0.940	20
Total Xylene	0.150	0.142	0.141	95.0	93.8	70.0-130			1.29	20
(S) a,a,a-Trifluorotoluene(PID)				101	101	55.0-122				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:49 • (LCSD) 11/22/15 16:14												
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits		
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%		
TPH (GC/FID) Low Fraction	5.50	5.60	5.89	102	107	67.0-132			5.09	20		
(S) a,a,a-Trifluorotoluene(FID)				105	105	62.0-128						

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57																		
	Spike Amou	Spike Amount Original Result		pike Amount Original Result		Spike Amount Original Result		e Amount Original Result MS		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%						
Benzene	0.0500	ND	0.0472	0.0487	94.5	97.5	1	57.2-131			3.14	20						
Toluene	0.0500	ND	0.0431	0.0443	86.2	88.6	1	63.7-134			2.73	20						
Ethylbenzene	0.0500	ND	0.0454	0.0469	90.9	93.8	1	67.5-135			3.23	20						

ACCOUNT:	PROJECT:	SDG:
ARCADIS US - TX	TX001155.0001.00003	L802348

DATE/TIME:

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Volatile Organic Compounds (GC) by Method 8015/8021/8021B

QUALITY CONTROL SUMMARY

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

(/ · · · - · · (-/ · ·		unt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Total Xylene	0.150	0.00130	0.136	0.140	90.0	92.4	1	65.9-138			2.62	20
(S) a,a,a-Trifluorotoluene(PID)					99.6	99.7		55.0-122				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/1	5 23:22 • (M	SD) 11/22/15 23:47										
	Spike Amo	ount Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
TPH (GC/FID) Low Fraction	5.50	ND	5.22	5.70	94.8	104	1	50.0-143			8.97	20
(S) a,a,a-Trifluorotoluene(FID)					97.1	98.4		62.0-128				

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Semi-Volatile Organic Compounds (GC) by Method 8015

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 11/21/15 17:08				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C40 Oil Range	U		0.0118	0.100
(S) o-Terphenyl	110			50.0-150

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/21/15 17:26 • (LCSD) 11/	21/15 17:43									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
C10-C28 Diesel Range	1.50	1.46	1.43	97.2	95.3	70.0-130			1.95	20
(S) o-Terphenyl				117	109	50.0-150				

GLOSSARY OF TERMS

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Abbreviations and Definition	S
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SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
4	The sample concentration was greater than 4 times the spike value.
J	Estimated value.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina ¹	DW21704
lorida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
ouisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



ACCOUNT:	PROJECT:	SDG:	DATE/TIME:
ARCADIS US - TX	TX001155.0001.00003	L802348	12/02/15 10:19





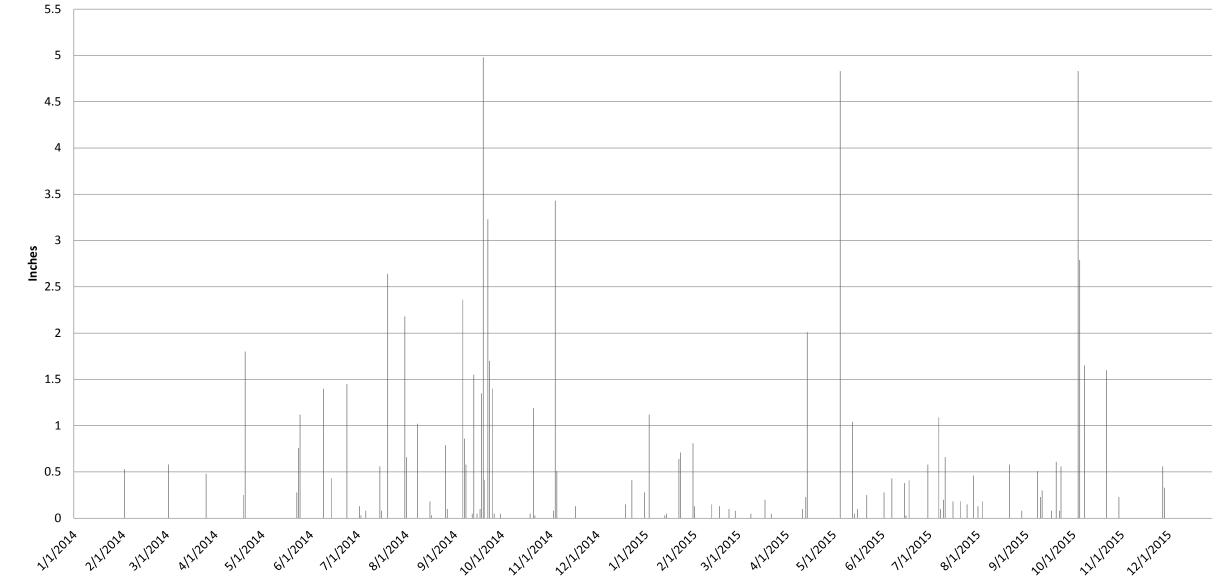
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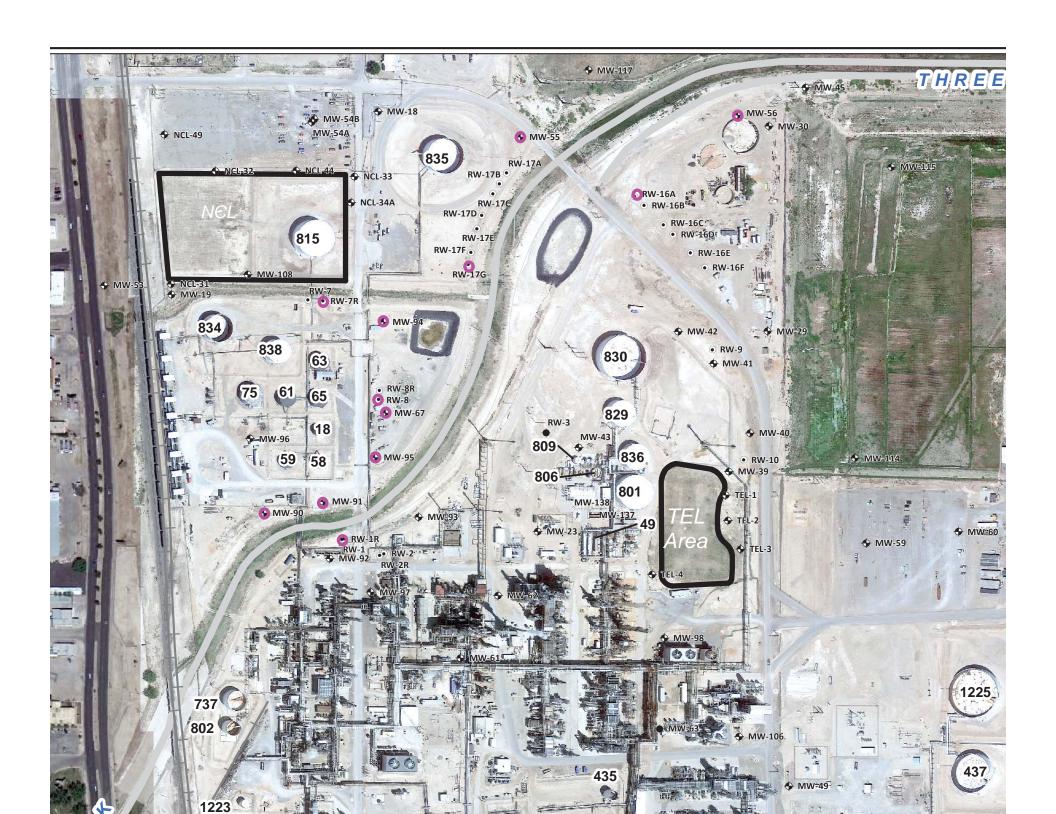
đ Weather Sunay, 505 11/19/15 Personnel: R. Wood 0 Eagle Draw Surface Sampling ¢ Arrived onsite. Attempted to get badge whiter but safety 0700 9 does not issue waivers for background checks anymore R. Combs spoke w/ safety and in Borned me that Domingo 0745 could escort me into Refinery Met Domingo @ Wanhouse to gather equipment 0830 0 Arrived @ MW-55 to begin sampling 0925 1030-Sample time Left area to go find buttlewire from ESC 1045 Could not locate sample bottles. Broke for lanch 1115 Arrived back onsite. Stopped EedEx driver to collect simple 1210 boffles. Arvived back @ Eagle Praw \$ 30 Collected E DO1-111915 1245 - Taken from surface water on the east sid of Engle Dow South of Navio Rd Collected EDOZ-11915 1310 Taken from surface water on the west side of Eagle Draw cust 1/6/15 Donth of Novijo Rd. 1330 Started pasting samples Dropped samples off @ FedEx building 1345 affite 1420 01 01 A X 6 6

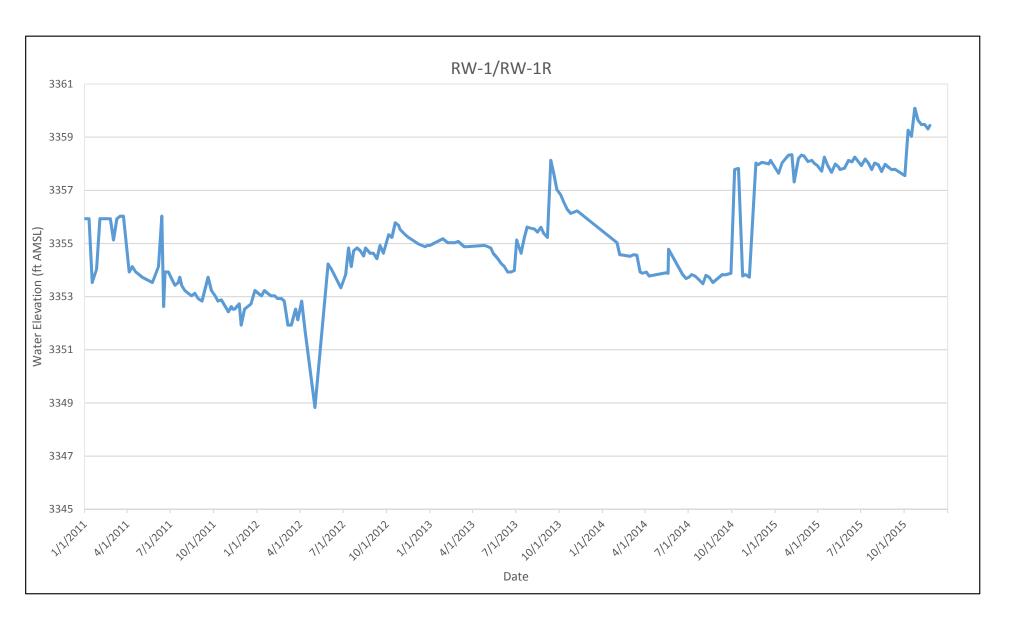
Attachment F Precipitation Data January 2011 – November 2015

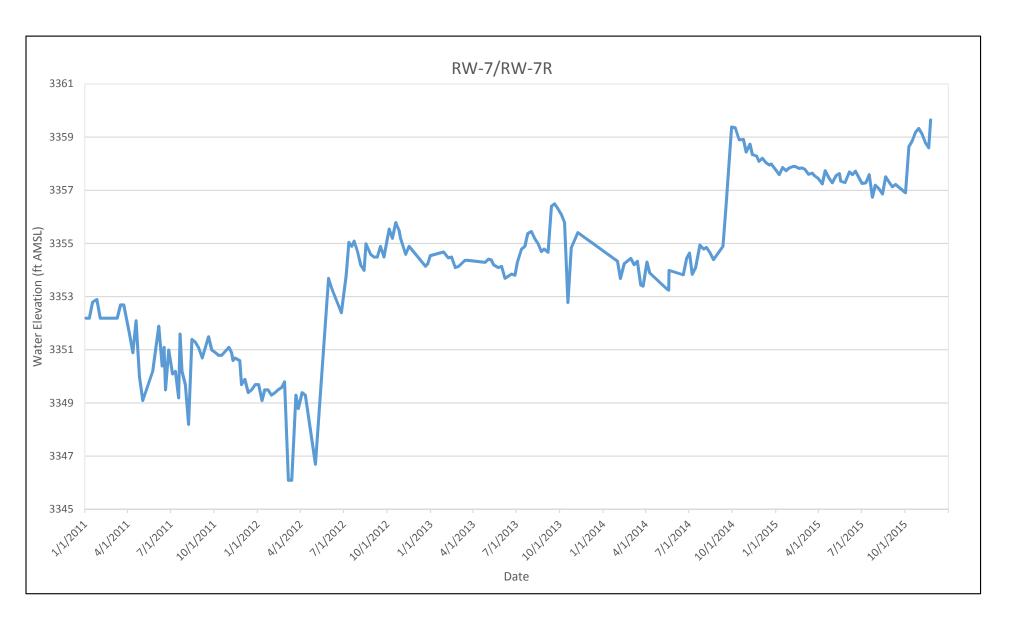
Precipitation (January 2014 – Present)

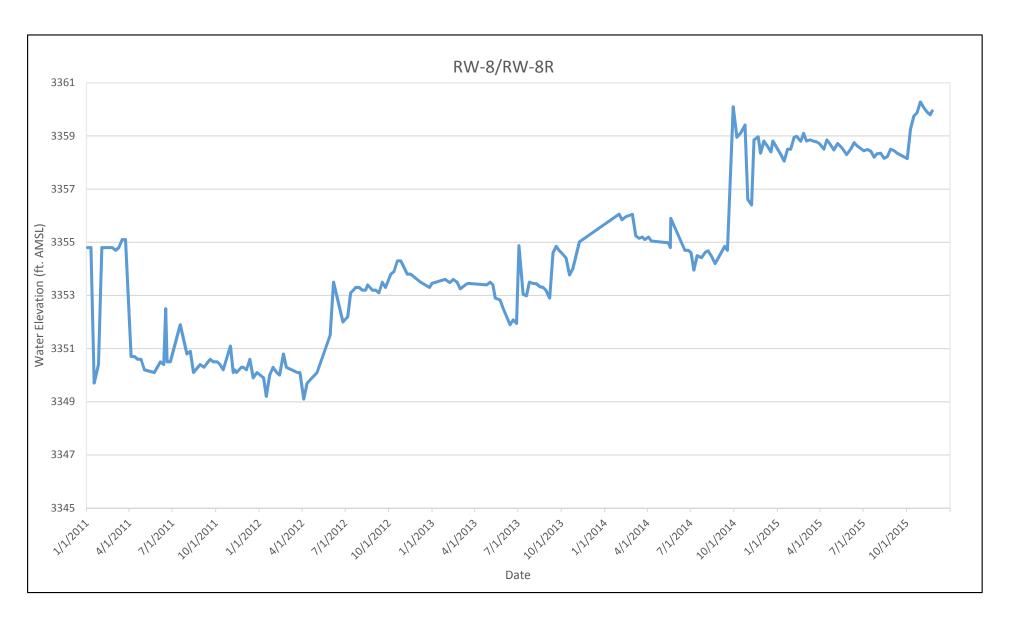


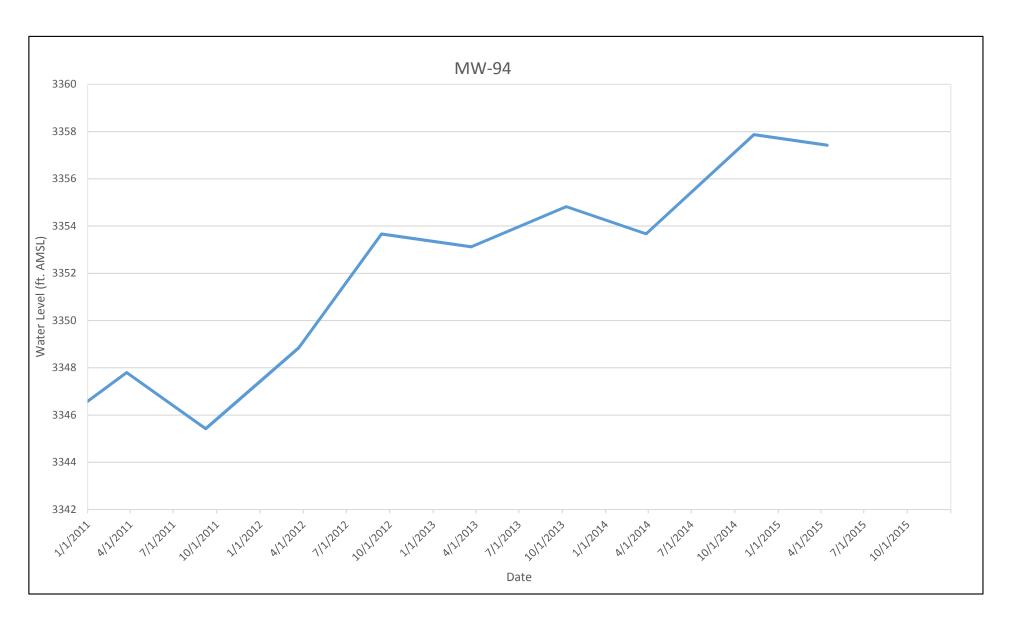
Attachment G GW Level Trends

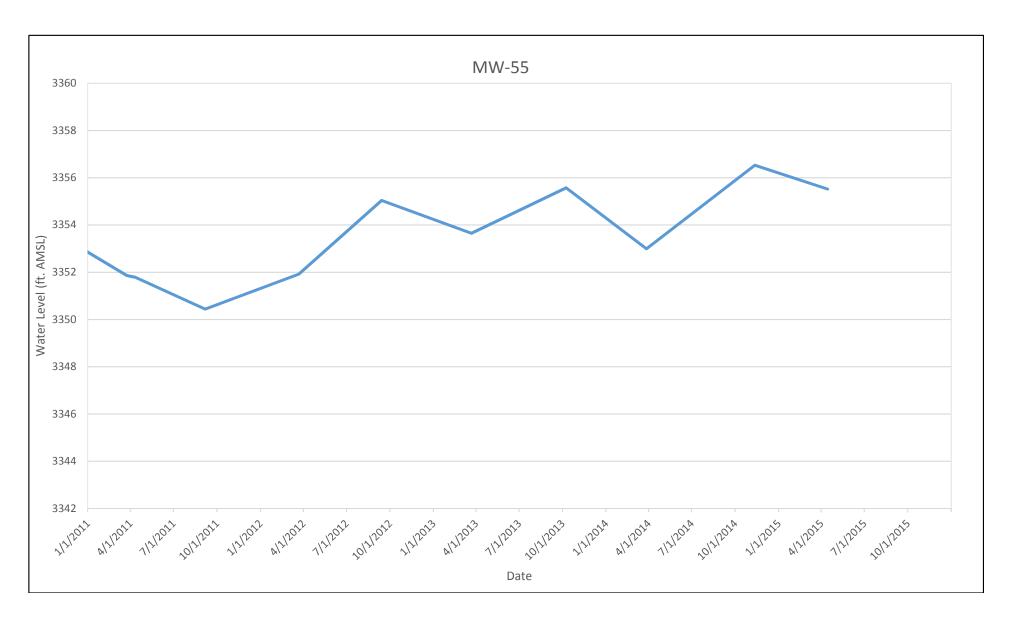


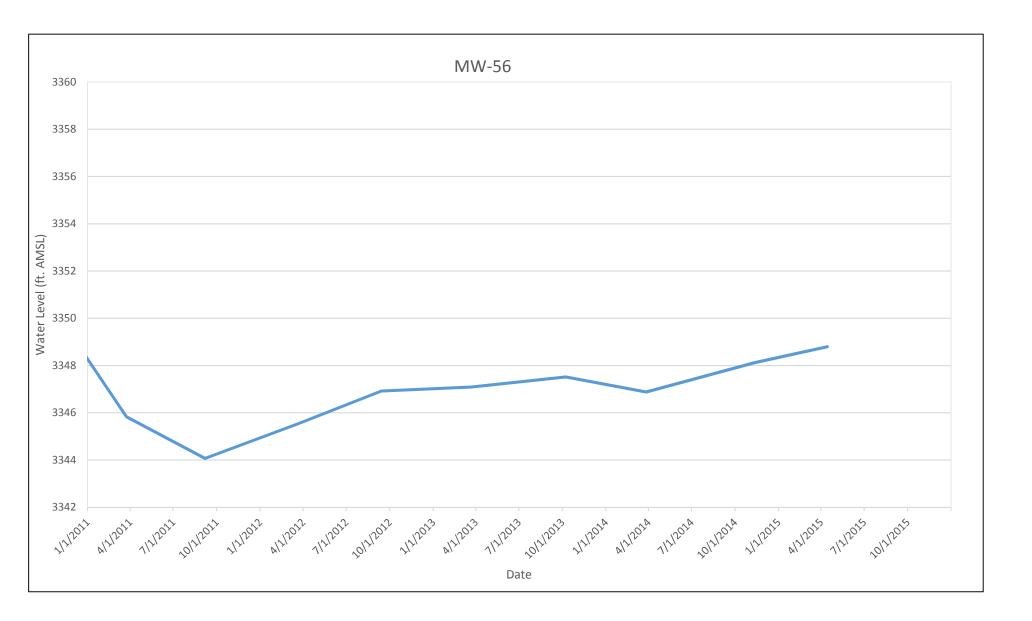


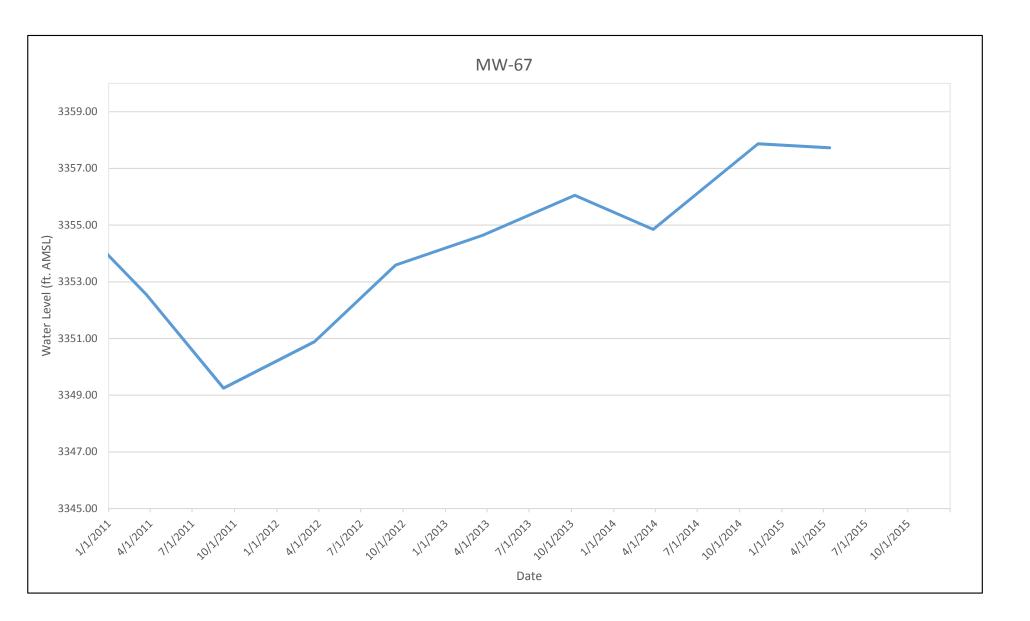


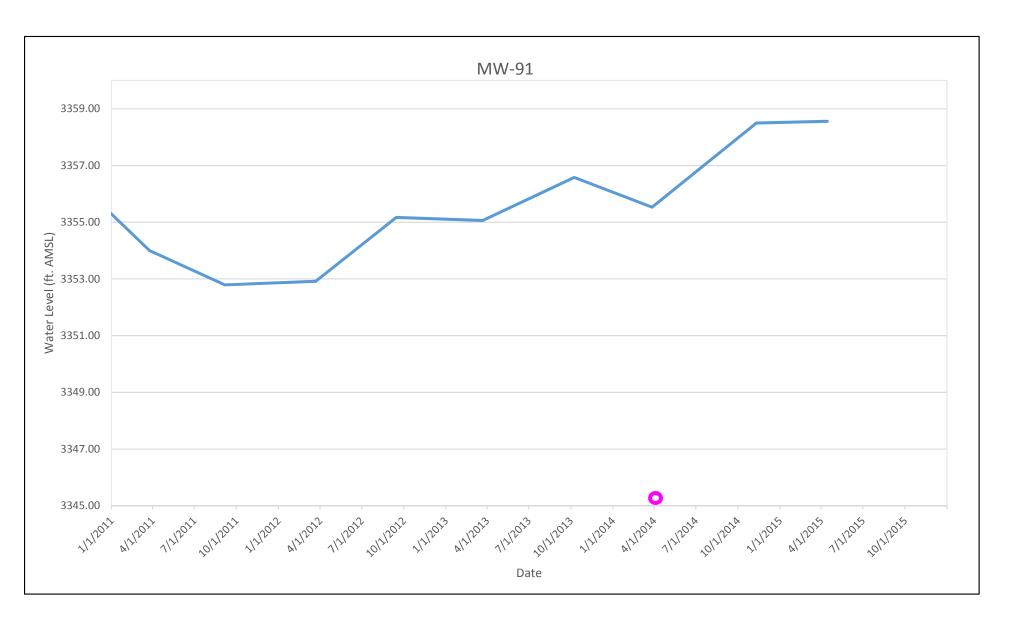


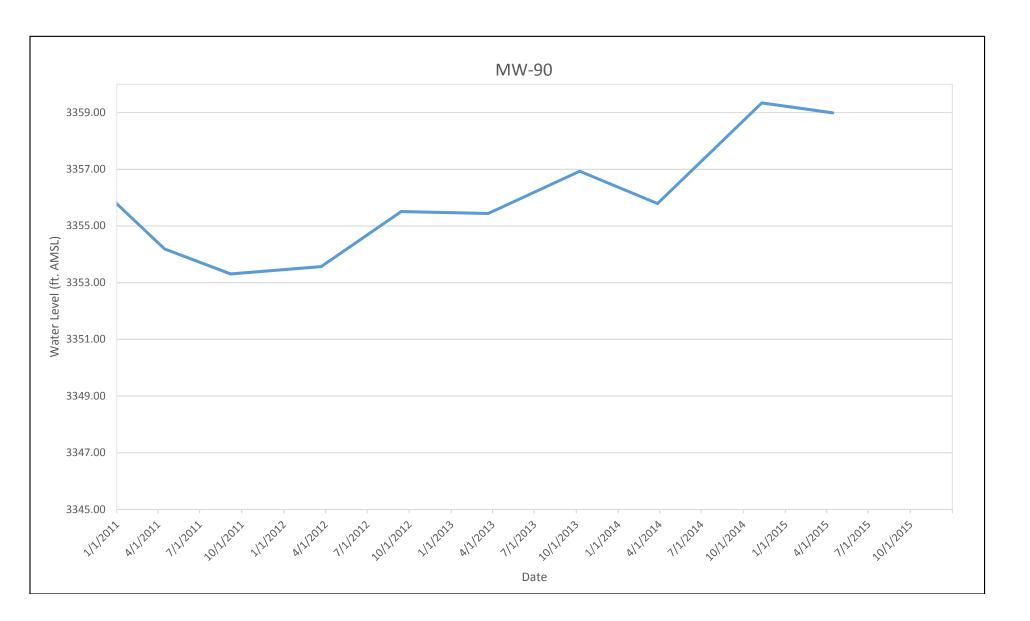


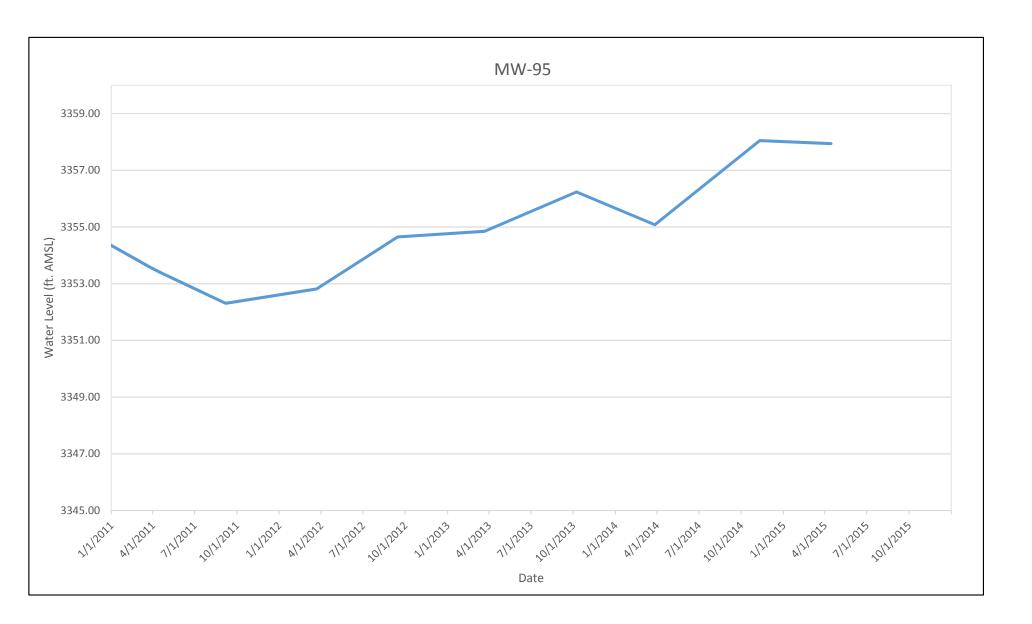


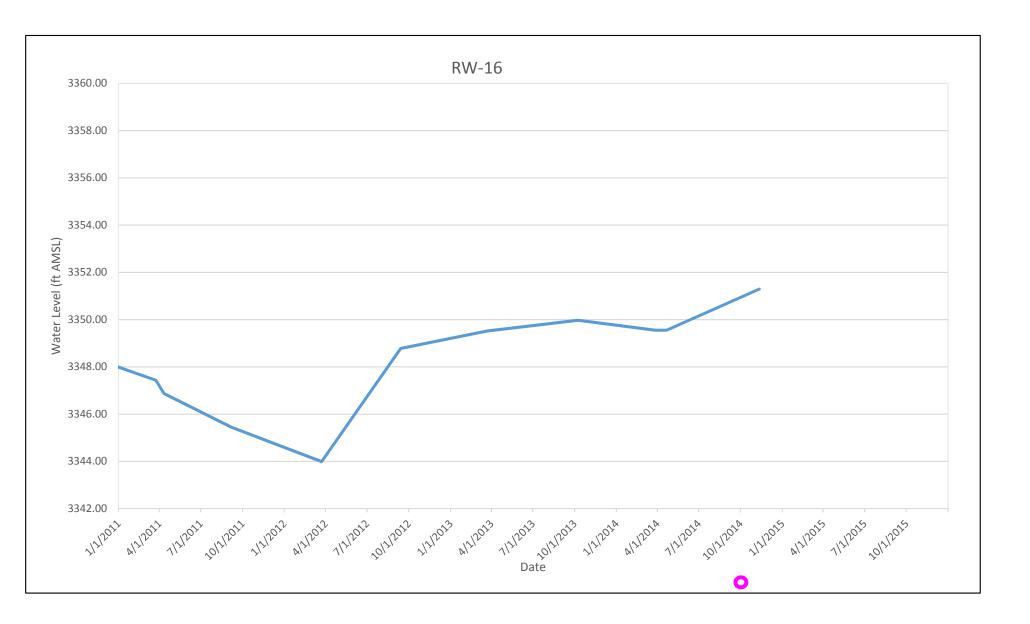


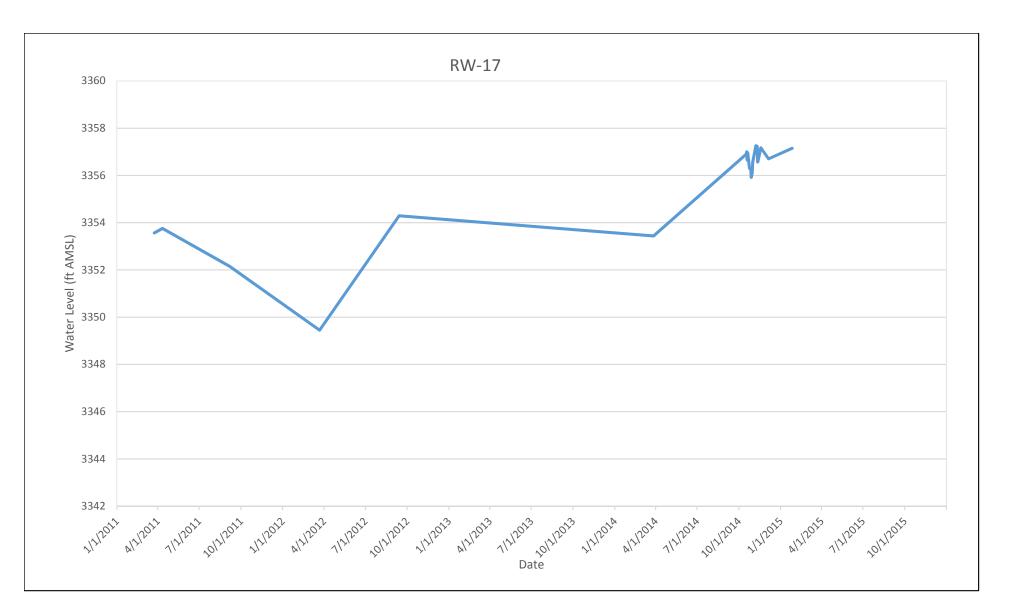












HOLLYFRONTIER.

January 8, 2016

Submitted by electronic mail

Mr. Carl Chavez, Environmental Engineer New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive Santa Fe, NM 87505

RE: C-141 Report on Seepage into Eagle Draw Discharge Permit GW-028

Dear Mr. Chavez:

On November 17, 2015, Navajo Refining Company, L.L.C. (Navajo) notified the Oil Conservation Division (OCD) and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) by telephone that Refinery personnel had observed evidence of the seepage of dark liquids through cracks in a concreted portion of the bank of Eagle Draw within the Refinery. Navajo also notified the National Response Center of this seepage the same day.

This report summarizes Navajo's actions taken to date regarding the seepage, including the measures summarized in your electronic mail of November 17, 2015, and proposed actions based upon our evaluation regarding the likely source of the seepage. Form C-141 is re-provided as Attachment A.

Refinery Setting

The location of the observed seepage along the bank of Eagle Draw is in the northwestern portion of the Refinery. Recovery well (RW) 17 is located on the west side of Eagle Draw, and due north of the observed seepage, and monitor well (MW)-55 is further to the northeast. The area of the seepage is within the Refinery's fenced boundaries. Attachment B provides Figure 1, which is the location of the seepage in relation to an overall Refinery map.

Actions Taken

At the time the incident was internally reported, Environmental Department personnel went out to inspect the seepage to develop an immediate course of action. There was no odor to the seepage itself, but the liquids expressing through cracks in the concrete sidewall appeared to be dark and featured entrained particulate matter. Absorbents were applied in order to remove as much stained material as possible. Although there was no sheen on the surface water in the Draw, field screening of ambient air over the surface water was conducted, but did not indicate

> HollyFrontier Navajo Refining LLC 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u>

Mr. Chavez January 8, 2016 Page 2

the presence of hydrogen sulfide or benzene. Notwithstanding the lack of hydrocarbon odor in the seepage or sheen on the water in the Draw, Navajo protectively placed oil absorbent booms downstream of the observed seepage locations, and booms will be replaced as needed.

Three water samples were collected on November 19, 2015 at the locations shown in Figure 2 (Attachment C). Two of the samples were collected from surface water: sample location ED01-111915 was very near the point where the seepage was observed within Eagle Draw, downstream of the confluence with Clark Draw. The second surface sample, ED02-111915, was collected further downstream within Eagle Draw east of Navajo Road, within the Refinery's fenceline.¹ At OCD's request for comparison purposes, a sample was also collected from monitoring well MW-55 (see Figure 2, Attachment C), which is screened from 13.7 to 23.7 feet below ground surface. The three samples, plus a trip blank for volatile organic compounds (VOC) analysis, were shipped overnight to a certified laboratory for analysis of the constituents requested by OCD (total petroleum hydrocarbons, general chemistry, VOCs, BTEX, and the eight RCRA metals).

The full set of analytes, associated screening levels, and analytical results are summarized in Table 1 (Attachment D), and a copy of the laboratory report (and the contractor's field notes) is provided as Attachment E. (The lab report erroneously identifies surface water sample ED02-111915 as "ED-1111915," as indicated by the markup on the report.) The lab report was also provided to you via electronic mail on December 21, 2015.

The analytical results from the groundwater sample and the two surface water samples were compared to the following screening levels:

- Upper tolerance limit (UTL) calculated for background concentrations of general chemistry parameters and mercury (from Navajo's background groundwater investigation report submitted to OCD and NMED in September 2015);
- Lower of the New Mexico Water Quality Control Commission (WQCC) Water Quality Standard (WQS) provided in 20.6.2.3103 New Mexico Administrative Code (NMAC) or the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for metals (other than mercury) and VOCs.
- TPH screening level provided in the 2012 version of the HWB risk assessment guidance document for TPH DRO and TPH ORO.
- Human Health Surface Water Quality Standards (SWQS)
- Aquatic Life SWQS

As Table 1 (Attachment D) indicates, the water quality of the two surface water samples is affected primarily by total petroleum hydrocarbons (TPH): Diesel Range Organics (DRO) and Oil Range Organics (ORO), even more so than levels in MW-55. The TPH and VOCs in ED02-

¹The coordinates of the ED01-111915 sample area are latitude 32.852356 and longitude 104.393864, while those of the ED02-111915 sample are latitude 32.852972 and longitude 104.393347.

Mr. Chavez January 8, 2016 Page 3

111955, the downstream surface water sample, are significantly lower than the sample collected nearest the seep, indicating that degradation of these compounds is occurring.

- MW-55: The reported concentration of TPH DRO exceeds the TPH screening level in the sample collected from MW-55. All other constituents of concern (COCs) were either not detected or were reported at concentrations below the screening levels.
- ED01-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected closest to the observed seep. The reported concentrations of arsenic and benzene exceed the EPA MCLs in the sample collected closest to the observed seep. The reported concentration of benzene exceeds the aquatic life chronic SWQS. All other COCs were either not detected or were reported at concentrations below the screening levels.
- ED02-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected on the downstream side of Navajo Road. The reported concentration of potassium exceeds the background UTL in this sample. All other COCs were either not detected or were reported at concentrations below the screening levels.

Evaluation and Recommendations

Navajo has observed higher than normal groundwater levels in the monitoring wells located in the northern portion of the Artesia Refinery during the past two years, most likely due to heavier than normal rainfall in the region during this period. Attachments F and G present the historic precipitation data for the area and ground elevation trends. We believe that impacted groundwater associated with a solid waste management unit and/or an area of contamination, which is being monitored and, in some cases, recovered through implementation of the Facility-Wide Ground Water Monitoring Program (FWGWMP), is the seepage liquid. The constituents of concern measured in the surface water samples appear to be consistent generally with results of recent FWGWMP events for the adjacent wells and recovery trenches.

In addition to the actions taken thus far, we propose the following:

- Conduct weekly inspections of the seepage area for the month of January 2016 to visually examine for additional seepage and potential sheens on surface water in Eagle Draw.
- As needed, apply absorbents to recover/remove any seepage.
- Ensure that booms are ready and serviceable to put into use in surface waters in Eagle Draw, as needed.
- Take and record water level elevations in RW-17A and RW-17G on a weekly basis during the month of January 2016 in order to evaluate fluctuations in levels in comparison to weather.

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- Operate RW-7 and RW-8 consistently during the month of January 2016 in order to reduce groundwater elevations.
- Repair the concrete fissures in this specific locale of Eagle Draw.

Should you have any questions about this notification report, please do not hesitate to contact me at (575) 746-5487 or <u>scott.denton@hollyfrontier.com</u>.

Sincerely,

Scott M. Denton Environmental Manager

c: Robert A. Combs, Artesia Refinery, Environmental Specialist Leona Tsinnajinnie, NMED HWB

Enclosures:

Attachment A – Form C-141

Attachment B – Figure 1 (Location of Seepage within the Refinery)

Attachment C – Figure 2 (Locations of November 19, 2015 Samples)

Attachment D – Table 1 (Analytical Results and Comparison Standards)

Attachment E – Analytical Lab Report with Contractor Field Notes

Attachment F - Precipitation Data January 2011 - November 2015

Attachment G - GW Level Trends

HollyFrontier Navajo Refining LLC 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u> Attachment A Form C-141 (Previously provided to OCD)

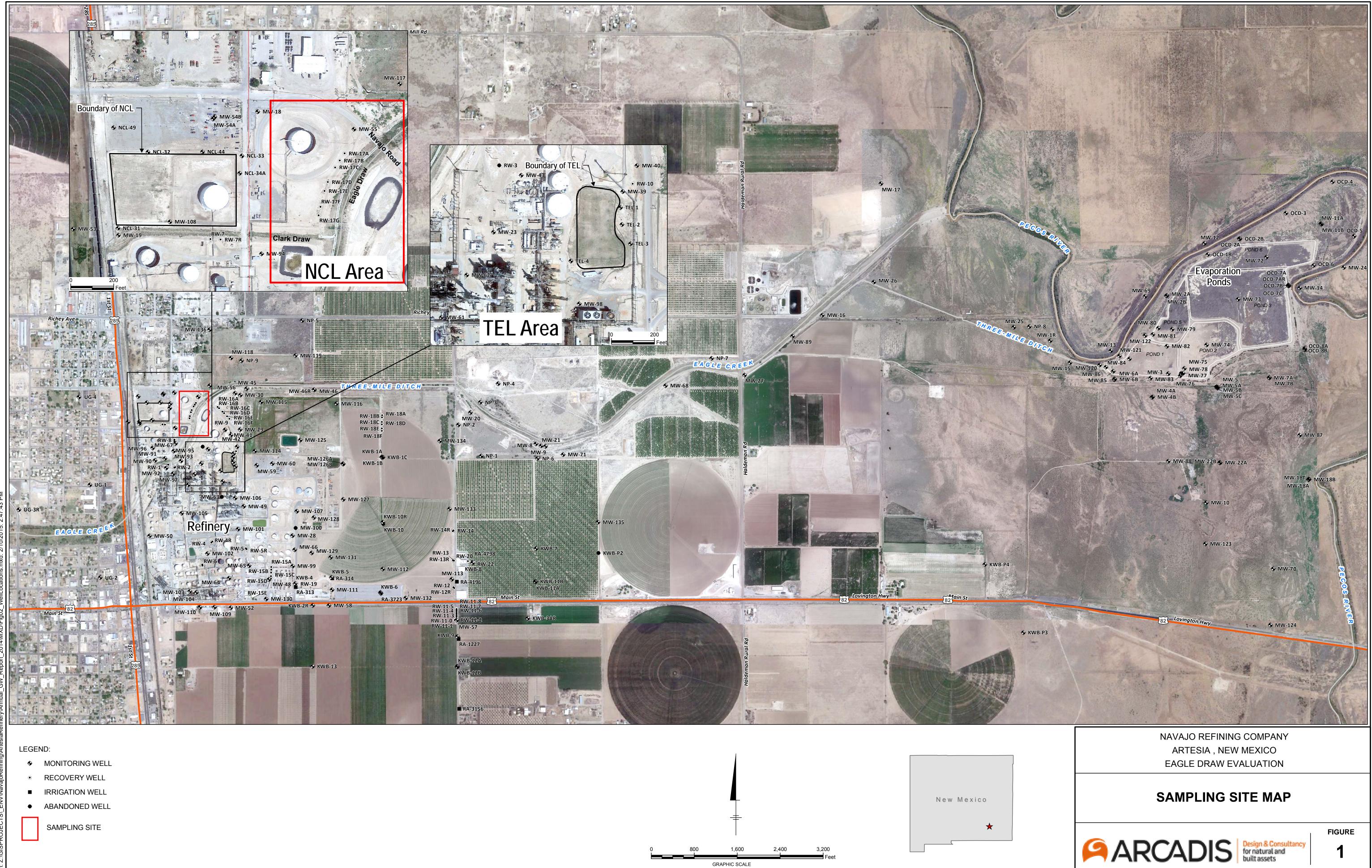
Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

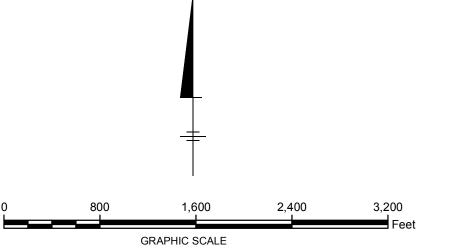
Release Notification	on and Co	orrective A	ction							
	OPERA		🛛 Init	ial Report 🔲 Final Report						
Name of CompanyNavajo Refining Company, L.L.C.Address501 E. Main St. Artesia, NM 88210	Contact Robert Combs									
Facility Name Navajo Refining Company, L.L.C. Artesia	Telephone No. 575-746-5382 Facility Type Refinery									
Surface Owner Mineral Owner			API N	0.						
LOCATIO		LEASE								
Unit Letter Section Township Range Feet from the Nort	h/South Line	Feet from the	East/West Line	County						
Latitude	Longitu	de								
NATURI	E OF REL	EASE								
Type of Release: Visible evidence of hydrocarbons from groundwater	Volume of	Release		Recovered: N/A, Absorbent						
expressed at the ground surface due to elevated water table.	approxima	tely < 1 gallon		applied to recover/remove						
				bon staining from groundwater						
Source of Release Impacted groundwater		Hour of Occurrence	e Date and	l Hour of Discovery						
Was Immediate Notice Given?	12/2/15 U If YES, To	nknown hour	12/2/15@	@11:40 am						
Yes No Not Required	National R	esponse Center a	t 11:50 am							
		a Fe office at 4:50								
By Whom? Gabriela Combs/Robert Combs Was a Watercourse Reached?		Iour please see al		· · · · · ·						
Yes 🗌 No	< 1 gallon									
If a Watercourse was Impacted, Describe Fully.*	1									
A small area of stained concrete located at the base of Clark Draw and H	Eagle Draw.									
Describe Cause of Problem and Remedial Action Taken.* A hydrocart	on stained are	was discovered	hy Refinery perso	nnel in the base of Clark Draw						
on 12/2/15. There is not an active release of hydrocarbons from Refiner	y operations.	There is no hydro	ocarbon sheen pres	sent in the water. The impacts of						
groundwater extrusion are being addressed by removal of hydrocarbons downstream as a precautionary measure to prevent the potential for resid										
while the remedial action described below is being implemented.	iuai nydrocaro	ons to impact any	nowing condition	is in the water way that may arise						
Describe Area Affected and Cleanup Action Taken.*										
The stained area was confined to small, specific areas of the concrete. T separated hydrocarbons; if present, a vacuum truck will be used for the	he adjacent re text several da	covery trench will vs to remove any	l be monitored rou product collected	tinely for evidence of phase in the adjacent monitoring well						
			-	in the adjacent monitoring wen.						
A final C-141 report will be submitted to OCD and HWB once corrective	e actions, sam	ple results, etc. ar	e complete.							
I hereby certify that the information given above is true and complete to	the best of my	knowledge and u	inderstand that put	rsuant to NMOCD rules and						
regulations all operators are required to report and/or file certain release	notifications a	nd perform correc	ctive actions for re	leases which may endanger						
. public health or the environment. The acceptance of a C-141 report by a should their operations have failed to adequately investigate and remedi										
or the environment. In addition, NMOCD acceptance of a C-141 report										
federal, state, or local laws and/or regulations.			anna							
IAI Ko		<u>OIL CON</u>	SERVATION	DIVISION						
Signature: 10400 m										
/ Printed Name: Robert Combs	Approved by	Environmental S	pecialist:							
Title: Environmental Specialist	Approval Da	te:	Expiration	Date:						
E-mail Address: robert.combs@hollyfrontier.com	Conditions o	f Approval:		Attached						
Data: 12/0/15 Diama 575 746 5292										
Date: 12/8/15 Phone: 575-746-5382 Attach Additional Sheets If Necessary Image: Comparison of the state										

Attachment B

Figure 1 – Location of seepage within the Refinery

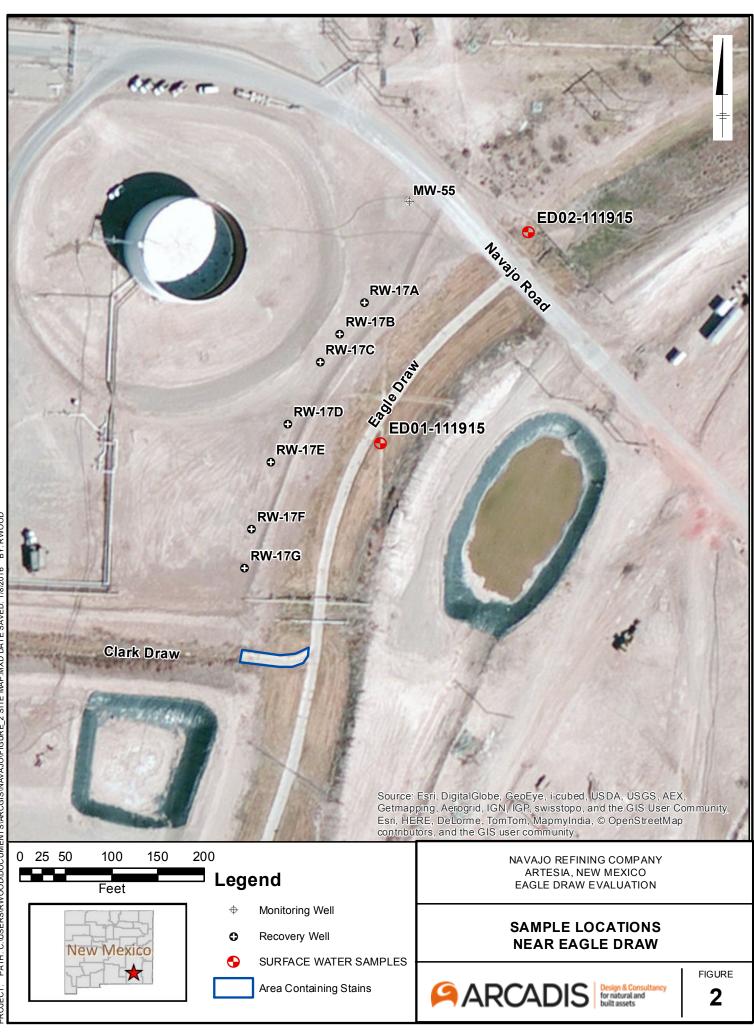


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Attachment C

Figure 2 – Locations of November 19, 2015 Samples



CITY:(HOUSTON) DIV/GROUP:(INF/GIS) LD:(V.PAOUNCIC) PIC:/PM:() TM:(R.WOOD) PROJECT: PATH: C:/USERSIRWOOD/DOCUMENTS/ARCGISI/NAVAJO/FIGURE_2 SITE MAP./MXD DATE SAVED: 1/8/2016 BY:RWOOD

Chavez, Carl J, EMNRD

From:	Krueger, Pamela <pam.krueger@arcadis.com></pam.krueger@arcadis.com>
Sent:	Tuesday, December 22, 2015 8:43 AM
То:	Chavez, Carl J, EMNRD
Cc:	Robert Combs
Subject:	NRC Eagle Draw
Attachments:	L802348.pdf; Figure1-SiteMap_samples.pdf

Carl – On behalf of the Navajo Refining company, here is the laboratory report for the samples collected from surface water in Eagle Draw and from the nearby monitoring well MW-55. The attached figure shows the locations of the samples and the monitoring well. A final C-141 will be filed by mid-January 2016.

Pamela R. Krueger | Senior Project Manager / Principal-in-Charge | pam.krueger@arcadis.com Arcadis | Arcadis U.S., Inc.

2929 Briarpark Drive Houston TX | 77042 | USA T. +1 713 953 4816 | M. + 1 713 249 8548

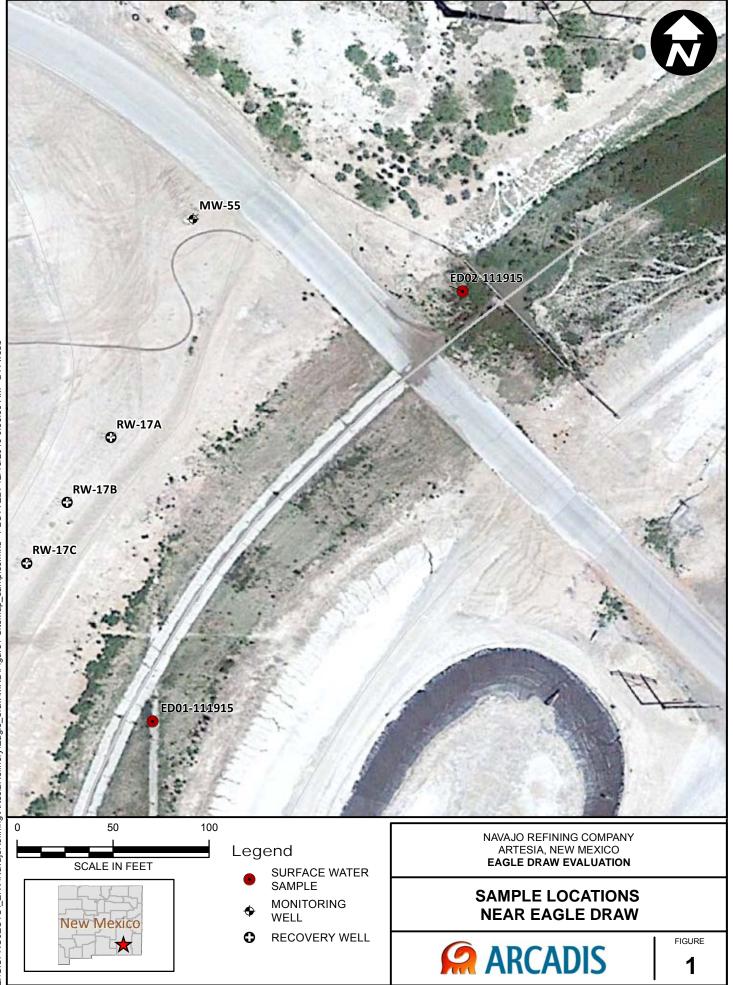
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Be green, leave it on the screen.

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CITY:Lansing DIV: ENV DB:DRA PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane New Mexico East FIPS 3001 Feet Z:\GISPROJECTS_ENV\NavajoRefining\ArtesiaRefineny\Eagle_draw\MXD\Figure1-SiteMap_samples.mxd PLOTTED: 12/18/2015 9:53:33 AM BY: webb



ANALYTICAL REPORT December 02, 2015



ARCADIS US - TX

Sample Delivery Group: Samples Received: Project Number: Description:

L802348 11/20/2015 TX001155.0001.00003 Navajo Refining Company - Artesia, NM

Report To:

Pam Krueger 2929 Briarpark Dr., Suite 300 Houston, TX 77042

Entire Report Reviewed By: Chu, for

Chris McCord Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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*	

Ср

Ss

Cn

Sr

Qc

GI

ΆI

Sc

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

Received date/time

11/20/15 09:00

Collected date/time 11/19/15 13:10 Ср

Тс

Ss

Cn

Sr

Qc

Gl

Â

Sc

MW-55 L802348-01 GW			Collected by	Collected date/time 11/19/15 10:30	Received date/time 11/20/15 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:03	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 14:44	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:18	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 18:45	11/22/15 18:45	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:19	11/30/15 16:19	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:13	11/24/15 15:13	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 15:59	11/24/15 15:59	DJD

ED01-111915 L802348-02 GW		Collected by	Collected date/time 11/19/15 12:45	Received date/time 11/20/15 09:00	
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:06	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 15:54	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:35	BJF
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	5	11/20/15 23:39	11/25/15 08:23	JNS
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:10	11/22/15 19:10	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:21	11/30/15 16:21	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:28	11/24/15 15:28	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:16	11/24/15 16:16	DJD

ED-1111915 L802348-03 GW

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:08	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 16:01	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:53	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:35	11/22/15 19:35	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:22	11/30/15 16:22	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:43	11/24/15 15:43	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:31	11/24/15 16:31	DJD
			Collected by	Collected date/time	Received date/time
TRIP BLANK L802348-04 GW				11/19/15 13:10	11/20/15 09:00

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC) by Method 8021B	WG830660	1	11/22/15 17:29	11/22/15 17:29	BMB

Collected by

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord Technical Service Representative

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE RESULTS - 01 L802348



AI

Gravimetric Analysis by Method 2540 C-2011

	, ,							l'Cn l
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	CP
Analyte	ug/l		ug/l	ug/l		date / time		2
Dissolved Solids	3480000		2820	10000	1	11/25/2015 17:16	WG831418	Tc

Wet Chemistry by Method 353.2

Wet Chemistry	y by Method 3	353.2						Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		⁴ Cn
Nitrate-Nitrite	4390		19.7	100	1	11/30/2015 16:19	WG832327	

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	225000		2600	50000	50	11/24/2015 15:59	WG830779
Fluoride	2020		9.90	100	1	11/24/2015 15:13	WG830779
Sulfate	2020000		3870	250000	50	11/24/2015 15:59	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:03	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l	qualifier	ug/l	ug/l	Bildton	date / time	Batch
Arsenic, Dissolved	5.53		0.250	2.00	1	11/24/2015 14:44	WG831296
Barium, Dissolved	10.5		0.360	5.00	1	11/24/2015 14:44	WG831296
Cadmium, Dissolved	U		0.160	1.00	1	11/24/2015 14:44	WG831296
Calcium, Dissolved	447000	4	46.0	1000	1	11/24/2015 14:44	WG831296
Chromium, Dissolved	1.86	J	0.540	2.00	1	11/24/2015 14:44	WG831296
Lead, Dissolved	0.389	J	0.240	2.00	1	11/24/2015 14:44	WG831296
Potassium, Dissolved	989	J	37.0	1000	1	11/24/2015 14:44	WG831296
Selenium, Dissolved	8.45	_	0.380	2.00	1	11/24/2015 14:44	WG831296
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 14:44	WG831296
Sodium, Dissolved	173000	4	110	1000	1	11/24/2015 14:44	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 18:45	<u>WG830660</u>
Toluene	U		0.180	5.00	1	11/22/2015 18:45	<u>WG830660</u>
Ethylbenzene	U		0.160	0.500	1	11/22/2015 18:45	<u>WG830660</u>
Total Xylene	1.30	J	0.510	1.50	1	11/22/2015 18:45	<u>WG830660</u>
TPH (GC/FID) Low Fraction	U		31.4	100	1	11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(Fl	D) 94.9			62.0-128		11/22/2015 18:45	<u>WG830660</u>
(S) a,a,a-Trifluorotoluene(Pl	D) 101			55.0-122		11/22/2015 18:45	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	356		22.2	100	1	11/21/2015 18:18	WG830634
C28-C40 Oil Range	108		11.8	100	1	11/21/2015 18:18	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:18	WG830634

ACCOUNT:	PROJECT:	SDG:	
ARCADIS US - TX	TX001155.0001.00003	L802348	

SAMPLE RESULTS - 02 L802348



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AI

Gravimetric Analysis by Method 2540 C-2011

	, ,							Cn	
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Cp	
Analyte	ug/l		ug/l	ug/l		date / time		2	ī
Dissolved Solids	2910000		2820	10000	1	11/25/2015 17:16	WG831418	Tc	

Wet Chemistry by Method 353.2

Wet Chemistry	y by Method 3	353.2						Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		4 Cn
Nitrate-Nitrite	U		19.7	100	1	11/30/2015 16:21	WG832327	

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	580000		2600	50000	50	11/24/2015 16:16	WG830779
Fluoride	1220		9.90	100	1	11/24/2015 15:28	WG830779
Sulfate	745000		3870	250000	50	11/24/2015 16:16	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:06	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Arsenic, Dissolved	15.9		0.250	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Barium, Dissolved	88.2		0.360	5.00	1	11/24/2015 15:54	<u>WG831296</u>	
Cadmium, Dissolved	U		0.160	1.00	1	11/24/2015 15:54	<u>WG831296</u>	
Calcium, Dissolved	420000		46.0	1000	1	11/24/2015 15:54	<u>WG831296</u>	
Chromium, Dissolved	1.09	J	0.540	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Lead, Dissolved	1.43	J	0.240	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Potassium, Dissolved	5590		37.0	1000	1	11/24/2015 15:54	<u>WG831296</u>	
Selenium, Dissolved	0.532	J	0.380	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 15:54	<u>WG831296</u>	
Sodium, Dissolved	250000		110	1000	1	11/24/2015 15:54	<u>WG831296</u>	

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	188		0.190	0.500	1	11/22/2015 19:10	<u>WG830660</u>
Toluene	19.2		0.180	5.00	1	11/22/2015 19:10	<u>WG830660</u>
Ethylbenzene	15.8		0.160	0.500	1	11/22/2015 19:10	WG830660
Total Xylene	131		0.510	1.50	1	11/22/2015 19:10	<u>WG830660</u>
TPH (GC/FID) Low Fraction	1380		31.4	100	1	11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(Fl	D) 97.6			62.0-128		11/22/2015 19:10	<u>WG830660</u>
(S) a,a,a-Trifluorotoluene(Pl	D) 104			55.0-122		11/22/2015 19:10	<u>WG830660</u>

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	7210		111	500	5	11/25/2015 08:23	WG830634
C28-C40 Oil Range	1160		11.8	100	1	11/21/2015 18:35	<u>WG830634</u>
(S) o-Terphenyl	120			50.0-150		11/21/2015 18:35	WG830634

ACCOUNT:	
ARCADIS US - TX	

PROJECT: TX001155.0001.00003

SDG: L802348

DATE/TIME: 12/02/15 10:19

SAMPLE RESULTS - 03 L802348



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Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l	ug/l		date / time		2
Dissolved Solids	1890000		2820	10000	1	11/25/2015 17:16	<u>WG831418</u>	Tc

Wet Chemistry by Method 353.2

Wet Chemistry	/ by Method 3	353.2						ໍSs
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		4 Cn
Nitrate-Nitrite	41.0	J	19.7	100	1	11/30/2015 16:22	WG832327	CII

Wet Chemistry by Method 9056MOD

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	452000		2600	50000	50	11/24/2015 16:31	WG830779
Fluoride	1490		9.90	100	1	11/24/2015 15:43	WG830779
Sulfate	1470000		3870	250000	50	11/24/2015 16:31	WG830779

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Mercury, Dissolved	U		0.0490	0.200	1	11/22/2015 11:08	WG830678	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic, Dissolved	7.85		0.250	2.00	1	11/24/2015 16:01	WG831296
Barium, Dissolved	63.0		0.360	5.00	1	11/24/2015 16:01	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 16:01	WG831296
Calcium, Dissolved	377000		46.0	1000	1	11/24/2015 16:01	WG831296
Chromium,Dissolved	1.04	J	0.540	2.00	1	11/24/2015 16:01	WG831296
ead, Dissolved	1.14	J	0.240	2.00	1	11/24/2015 16:01	WG831296
otassium,Dissolved	9330		37.0	1000	1	11/24/2015 16:01	WG831296
Selenium, Dissolved	6.42		0.380	2.00	1	11/24/2015 16:01	WG831296
Silver, Dissolved	U		0.310	2.00	1	11/24/2015 16:01	WG831296
Sodium, Dissolved	258000		110	1000	1	11/24/2015 16:01	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Benzene	2.85		0.190	0.500	1	11/22/2015 19:35	WG830660
Toluene	0.574	J	0.180	5.00	1	11/22/2015 19:35	WG830660
Ethylbenzene	0.669		0.160	0.500	1	11/22/2015 19:35	WG830660
Total Xylene	1.47	J	0.510	1.50	1	11/22/2015 19:35	WG830660
TPH (GC/FID) Low Fraction	46.9	J	31.4	100	1	11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(Fi	ID) 94.5			62.0-128		11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(P	ID) 99.6			55.0-122		11/22/2015 19:35	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	2190		22.2	100	1	11/21/2015 18:53	<u>WG830634</u>
C28-C40 Oil Range	621		11.8	100	1	11/21/2015 18:53	<u>WG830634</u>
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:53	WG830634

ACCOUNT:	
ARCADIS US - TX	

PROJECT: TX001155.0001.00003

SDG: L802348

DATE/TIME: 12/02/15 10:19

SAMPLE RESULTS - 04

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Volatile Organic Compounds (GC) by Method 8015/8021/8021B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		2
Benzene	U		0.190	0.500	1	11/22/2015 17:29	WG830660	Tc
Toluene	U		0.180	5.00	1	11/22/2015 17:29	WG830660	
Ethylbenzene	U		0.160	0.500	1	11/22/2015 17:29	WG830660	³Ss
Total Xylene	U		0.510	1.50	1	11/22/2015 17:29	WG830660	55
(S) a,a,a-Trifluorotolu	iene(PID) 101			55.0-122		11/22/2015 17:29	<u>WG830660</u>	⁴ Cn

WG831418

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 11/25/15 17:16				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/25/15 17:16 • (DUP) 11/25/15	5 17:16					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	3480	3590	1	3.26		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/25/15 17:16 • (LCSD) 11/25/15 17:16											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
Dissolved Solids	8800	8720	8610	99.1	97.8	85.0-115			1.27	5	

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Wet Chemistry by Method 353.2

QUALITY CONTROL SUMMARY L802348-01,02,03

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Method Blank (MB)

(MB) 11/30/15 16:08				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:19 • (DUP) 11/30/15	16:20					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	4.39	4.34	1	1.00		20

L802480-01 Original Sample (OS) • Duplicate (DUP)

L802480-01 Original Sar		Duplicate	(DOP)				7 Cl			
(OS) 11/30/15 16:36 • (DUP) 11/30/15 16:37										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	mg/l	mg/l		%		%	⁸ Al			
Nitrate-Nitrite	0.162	0.157	1	3.00		20				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/30/15 16:11 • (LCSD) 11/30/15 16:12													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%			
Nitrate-Nitrite	5.00	4.73	4.82	95.0	96.0	90.0-110			2.00	20			

L802392-01 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/30/15 16:23 • (MS) 11/30/15	(OS) 11/30/15 16:23 • (MS) 11/30/15 16:24												
	Spike Amou	unt Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier						
Analyte	mg/l	mg/l	mg/l	%		%							
Nitrate-Nitrite	5.00	1.93	6.97	101	1	90.0-110							

DATE/TIME: 12/02/15 10:19

Wet Chemistry by Method 353.2

QUALITY CONTROL SUMMARY

L802480-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/30/15 16:39 • (MS) 11/30/15 16:40 • (MSD) 11/30/15 16:41													
	Spike Amou	Spike Amount Original Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%	
Nitrate-Nitrite	5.00	6.08	11.0	11.0	98.0	98.0	1	90.0-110			0.000	20	



ACCOUNT: ARCADIS US - TX PROJECT: TX001155.0001.00003 SDG: L802348 DATE/TIME: 12/02/15 10:19

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WG830779

Wet Chemistry by Method 9056MOD

QUALITY CONTROL SUMMARY

(MB) 11/24/15 07:42				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	0.0916		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L801979-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 10:51 • (DUP) 11/24	/15 11:06					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	79.7	79.7	10	0		20
Fluoride	0.491	0.496	10	1		20
Sulfate	422	422	10	0		20

L802323-07 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 14:26 • (DUP) 11/24/1	(OS) 11/24/15 14:26 • (DUP) 11/24/15 14:42												
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits							
Analyte	mg/l	mg/l		%		%							
Chloride	36.4	36.4	10	0		20							
Fluoride	0.261	0.248	10	5		20							
Sulfate	110	109	10	0		20							

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 07:58 • (LCSD) 11/24/15 08:13													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%			
Chloride	40.0	39.8	39.9	100	100	90-110			0	20			
Fluoride	8.00	7.98	7.99	100	100	90-110			0	20			
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20			

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Wet Chemistry by Method 9056MOD

QUALITY CONTROL SUMMARY

RPD Limits

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L801999-04 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/24/15 11:21 • (MS) 11/24/15 11:37

Chloride 5.00 378 862 97 10 80-120 Fluoride 0.500 0.668 50.8 100 10 80-120		()							
Chloride 5.00 378 862 97 10 80-120 Fluoride 0.500 0.668 50.8 100 10 80-120			Spike Amou	nt Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
luoride 0.500 0.668 50.8 100 10 80-120	Analyte		mg/l	mg/l	mg/l	%		%	
	Chloride		5.00	378	862	97	10	80-120	
Sulfate 5.00 207 691 97 10 80-120	Fluoride		0.500	0.668	50.8	100	10	80-120	
	Sulfate		5.00	207	691	97	10	80-120	

L802323-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 13:40 • (MS) 11/24/1	5 13:55 • (MS	D) 11/24/15 14:11									
	Spike Amo	unt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%
Chloride	5.00	17.2	509	509	98	98	10	80-120			0
Fluoride	0.500	0.424	50.7	50.9	101	101	10	80-120			0
Sulfate	5.00	539	1030	1030	97	97	10	80-120			0

ACCOUNT: ARCADIS US - TX SDG: L802348 DATE/TIME: 12/02/15 10:19

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Mercury by Method 7470A

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) 11/22/15 10:19				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury, Dissolved	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 10:22 • (LCSD) 11/22/15 10:24													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%			
Mercury, Dissolved	0.00300	0.00260	0.00245	87	82	80-120			6	20			

L802534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 10:46 • (MS) 11/22/15	5 10:48 • (MSE	0) 11/22/15 10:51										
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury, Dissolved	0.00300	0.00000972	0.00281	0.00285	93	95	1	75-125			2	20

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Metals (ICPMS) by Method 6020

QUALITY CONTROL SUMMARY

(MB) 11/24/15 15:33					
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	mg/l	
Arsenic, Dissolved	U		0.00025	0.00200	
Barium,Dissolved	U		0.00036	0.00500	
Cadmium, Dissolved	U		0.00016	0.00100	
Calcium, Dissolved	U		0.046	1.00	
Chromium, Dissolved	0.000714		0.00054	0.00200	
Lead,Dissolved	0.000284		0.00024	0.00200	
Potassium, Dissolved	0.0441		0.037	1.00	
Selenium,Dissolved	U		0.00038	0.00200	
Silver, Dissolved	U		0.00031	0.00200	
Sodium,Dissolved	U		0.11	1.00	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 14:39 •	(LCSD) 11/24/15 14:41
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	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Arsenic,Dissolved	0.0500	0.0528	0.0503	106	101	80-120			5	20
Barium, Dissolved	0.0500	0.0490	0.0501	98	100	80-120			2	20
Cadmium, Dissolved	0.0500	0.0556	0.0519	111	104	80-120			7	20
Calcium, Dissolved	5.00	4.91	5.19	98	104	80-120			6	20
Chromium, Dissolved	0.0500	0.0530	0.0517	106	103	80-120			3	20
Lead, Dissolved	0.0500	0.0507	0.0503	101	101	80-120			1	20
Potassium, Dissolved	5.00	4.87	4.97	97	99	80-120			2	20
Selenium,Dissolved	0.0500	0.0506	0.0509	101	102	80-120			1	20
Silver, Dissolved	0.0500	0.0510	0.0511	102	102	80-120			0	20
Sodium,Dissolved	5.00	5.34	5.68	107	114	80-120			6	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55												
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Arsenic, Dissolved	0.0500	0.00553	0.0603	0.0619	110	113	1	75-125			3	20
Barium, Dissolved	0.0500	0.0105	0.0589	0.0601	97	99	1	75-125			2	20
Cadmium, Dissolved	0.0500	0.0000293	0.0546	0.0559	109	112	1	75-125			2	20

ACCOUNT:
ARCADIS US - TX

PROJECT: TX001155.0001.00003 SDG: L802348 DATE/TIME: 12/02/15 10:19

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Metals (ICPMS) by Method 6020

QUALITY CONTROL SUMMARY

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

	(/										
	Spike Amou	Int Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Calcium,Dissolved	5.00	447	437	438	0	0	1	75-125	4	4	0	20
Chromium, Dissolved	0.0500	0.00186	0.0507	0.0504	98	97	1	75-125			0	20
Potassium, Dissolved	5.00	0.989	5.49	5.45	90	89	1	75-125			1	20
Lead, Dissolved	0.0500	0.000389	0.0483	0.0490	96	97	1	75-125			1	20
Selenium, Dissolved	0.0500	0.00845	0.0591	0.0591	101	101	1	75-125			0	20
Silver, Dissolved	0.0500	0.000110	0.0490	0.0493	98	98	1	75-125			1	20
Sodium, Dissolved	5.00	173	173	176	0	55	1	75-125	4	4	2	20

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SDG: L802348 DATE/TIME: 12/02/15 10:19

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Volatile Organic Compounds (GC) by Method 8015/8021/8021B

QUALITY CONTROL SUMMARY

(MB) 11/22/15 17:03					
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	mg/l		mg/l	mg/l	-
Benzene	U		0.000190	0.000500	
Toluene	0.000458		0.000180	0.00500	3
Ethylbenzene	U		0.000160	0.000500	
Total Xylene	U		0.000510	0.00150	4
TPH (GC/FID) Low Fraction	U		0.0314	0.100	
(S) a,a,a-Trifluorotoluene(FID)	95.4			62.0-128	
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122	5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:00 • (LCSD) 11/2	22/15 15:25									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0500	0.0487	0.0487	97.5	97.4	70.0-130			0.0400	20
Toluene	0.0500	0.0452	0.0446	90.4	89.2	70.0-130			1.40	20
Ethylbenzene	0.0500	0.0471	0.0467	94.3	93.4	70.0-130			0.940	20
Total Xylene	0.150	0.142	0.141	95.0	93.8	70.0-130			1.29	20
(S) a,a,a-Trifluorotoluene(PID)				101	101	55.0-122				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:49 • (LCSD) 11/22	2/15 16:14									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
TPH (GC/FID) Low Fraction	5.50	5.60	5.89	102	107	67.0-132			5.09	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	62.0-128				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15	22:32 • (MSE	D) 11/22/15 22:57										
	Spike Amou	nt Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Benzene	0.0500	ND	0.0472	0.0487	94.5	97.5	1	57.2-131			3.14	20
Toluene	0.0500	ND	0.0431	0.0443	86.2	88.6	1	63.7-134			2.73	20
Ethylbenzene	0.0500	ND	0.0454	0.0469	90.9	93.8	1	67.5-135			3.23	20

ACCOUNT:	PROJECT:	SDG:
ARCADIS US - TX	TX001155.0001.00003	L802348

DATE/TIME:

12/02/15 10:19



Qc

GI

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Sc

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

QUALITY CONTROL SUMMARY

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

	· · ·	/										
	Spike Amou	Int Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Total Xylene	0.150	0.00130	0.136	0.140	90.0	92.4	1	65.9-138			2.62	20
(S) a,a,a-Trifluorotoluene(PID)					99.6	99.7		55.0-122				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 23:22 • (MSD) 11/22/15 23:47												
	Spike Amo	ount Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
TPH (GC/FID) Low Fraction	5.50	ND	5.22	5.70	94.8	104	1	50.0-143			8.97	20
(S) a,a,a-Trifluorotoluene(FID)					97.1	98.4		62.0-128				

Sc

WG830634

Semi-Volatile Organic Compounds (GC) by Method 8015

QUALITY CONTROL SUMMARY

Тс

Ss

Cn

Sr

Qc

GI

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Sc

Method Blank (MB)

(MB) 11/21/15 17:08				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C40 Oil Range	U		0.0118	0.100
(S) o-Terphenyl	110			50.0-150

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/21/15 17:26 • (LCSD) 11/2	21/15 17:43									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
C10-C28 Diesel Range	1.50	1.46	1.43	97.2	95.3	70.0-130			1.95	20
(S) o-Terphenyl				117	109	50.0-150				

GLOSSARY OF TERMS

₩

Ср

Тс

Ss

Cn

Sr

Qc

GI

ΆI

Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
4	The sample concentration was greater than 4 times the spike value.
J	Estimated value.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34				
Alaska	UST-080	New Hampshire	2975				
Arizona	AZ0612	New Jersey-NELAP	TN002				
Arkansas	88-0469	New Mexico	TN00003				
California	01157CA	New York	11742				
Colorado	TN00003	North Carolina	Env375				
Conneticut	PH-0197	North Carolina ¹	DW21704				
lorida	E87487	North Carolina ²	41				
Georgia	NELAP	North Dakota	R-140				
Georgia ¹	923	Ohio-VAP	CL0069				
daho	TN00003	Oklahoma	9915				
Illinois	200008	Oregon	TN200002				
ndiana	C-TN-01	Pennsylvania	68-02979				
lowa	364	Rhode Island	221				
Kansas	E-10277	South Carolina	84004				
Kentucky ¹	90010	South Dakota	n/a				
Kentucky ²	16	Tennessee 14	2006				
ouisiana	AI30792	Texas	T 104704245-07-TX				
Maine	TN0002	Texas ⁵	LAB0152				
Maryland	324	Utah	6157585858				
Massachusetts	M-TN003	Vermont	VT2006				
Michigan	9958	Virginia	109				
Minnesota	047-999-395	Washington	C1915				
Mississippi	TN00003	West Virginia	233				
Missouri	340	Wisconsin	9980939910				
Montana	CERT0086	Wyoming	A2LA				
Nebraska	NE-OS-15-05						

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



ACCOUNT:	PROJECT:	SDG:	DATE/TIME:
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PAGE: 21 of 23

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m Krueger				m.krueger@arcadi	us.com	-				VoPres						P1 F4	Phone: 800-767-5855 Fax: 615-758-5859	
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Chavez, Carl J, EMNRD

From:	Chavez, Carl J, EMNRD
Sent:	Thursday, December 10, 2015 2:51 PM
То:	'Combs, Robert'
Cc:	Denton, Scott; Griswold, Jim, EMNRD
Subject:	RE: Navajo Refinery (GW-028) Wastewater Pipeline Break near the Evaporation Ponds
	Area Revised Work Plan Review

Robert:

Please see OCD requirements in red text below.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM Environmental Engineer Oil Conservation Division- Environmental Bureau 1220 South St. Francis Drive Santa Fe, New Mexico 87505 Phone: (505) 476-3490 Main Phone: (505) 476-3440 Fax: (505) 476-3462 E-mail: <u>Carl J. Chavez@state.nm.us</u> Website: <u>www.emnrd.state.nm.us/ocd</u> Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to "Publications" and "Pollution Prevention" on the OCD Website.

From: Combs, Robert [mailto:Robert.Combs@HollyFrontier.com]
Sent: Wednesday, December 02, 2015 5:32 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: RE: Navajo Refinery (GW-028) Wastewater Pipeline Break near the Evaporation Ponds Area Revised Work Plan Review

Carl,

Please see below for our responses to comments, as well as the attached, updated workplan. It looks as though our discussion was on 10/13/15; some content is to that effect. Please feel free to call if we need to discuss further. Thanks,

Robert

The New Mexico Oil Conservation Division (OCD) reviewed the Work Plan (WP) dated August 21, 2015 and has the following comments/recommendations:

1) Pg. 2/4: OCD discussed the statistically developed UTLs developed in the Evaporation Pond Area and NMED indicated that no background values have been accepted by NMED at the time of this review. Therefore, OCD cannot condone the use of UTLs for comparison in the Soil Borings and Groundwater at this time. Table 1 includes UTLs and that is ok, but it is not appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release. Navajo understands that the purpose of the upgradient boring and temporary monitor well is to determine soil and groundwater

concentrations from an area not impacted by the release. *[Chavez, Carl J, EMNRD]* No, the temporary MW serves as a background location to assess pollutants in soils and water media at both locations.

- 2) Pg. 2/4: OCD prefers a location for the alternate Soil Boring (SB) / Temporary MW (TMW) toward the SW away from the evaporation pond area and in a location that is not suspect for contamination. The environmental analytical laboratory test data results will be used for comparison with this SB/TMW. The reasoning behind the proposed location of the 'background' well is that the area NW of the release is topographically and hydraulically upgradient/crossgradient from the spill area. We feel that this area is appropriate for the soil boring/TMW installation, not southwest of the spill area.
- 3) Pg. 3/4: OCD requires in addition to the WP that soil sampling occur every 10 ft. from ground surface to the water table. Groundwater sampling at the water table is required. As we discussed this morning, depth to groundwater in the area at approximately 10 ft. below ground surface. We proposed in the WP to sample the intervals 0-1', 3-4' and the capillary zone. We will modify the WP to collect samples at 0-1', 4-5' and the capillary zone (just above the water table). *[Chavez, Carl J, EMNRD]* A groundwater sample must also be taken.
- 4) Pg. 3/4: The soil and groundwater sampling constituents of concern shall include WQCC Metals. In groundwater, Total Dissolved Solids and pH shall be added to the list. PSH shall be reported within 24 hours of discovery to the OCD. As we discussed, we will change the groundwater analyte list to be the same as the soil analytes, and add TDS and pH. We will continue to run only iron and manganese, as these were the only metals that exceeded WQCC in the sample of the effluent water. We do not believe that there would be other metals present that would be attributable to this release.[Chavez, Carl J, EMNRD] Run RCRA 8 Metals.
- 5) Pg. 3/4: Same as No. 1 above. The SB/TMW data results will be compared against each other and the Tables 1 and 2 to develop conclusions. As indicated in No. 1 above, UTLs will not be considered in the evaluation of data. The TMWs shall be properly abandoned per No. 6 below after OCD approves a proposal to PA the TMWs. Noted, no comment.
- 6) Pg. 3/4 Second Paragraph from Bottom: The WP as proposed with the exception that at least 10 ft. of screen w/ top of screen set ~ 5 ft. above the water table. Also, OCD would like the wells to be pulled out after use w/ bentonite pellets inserted into the borehole to surface and then hydrated to expand. We will add a description of our planned plugging and abandonment activities in the workplan. Sorry for this oversight.
- 7) Pg. 4/4 Second Paragraph: The constituents of concern list should be similar to No. 4 above. Please see response to #4.

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, September 04, 2015 4:02 PM
To: Combs, Robert; Denton, Scott
Cc: Griswold, Jim, EMNRD
Subject: Navajo Refinery (GW-028) Wastewater Pipeline Break near the Evaporation Ponds Area Revised Work Plan Review

Robert and Scott:

The New Mexico Oil Conservation Division (OCD) reviewed the Work Plan (WP) dated August 21, 2015 and has the following comments/recommendations:

- Pg. 2/4: OCD discussed the statistically developed UTLs developed in the Evaporation Pond Area and NMED indicated that no background values have been accepted by NMED at the time of this review. Therefore, OCD cannot condone the use of UTLs for comparison in the Soil Borings and Groundwater at this time. Table 1 includes UTLs and that is ok, but it is not appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release.
- 2) Pg. 2/4: OCD prefers a location for the alternate Soil Boring (SB) / Temporary MW (TMW) toward the SW away from the evaporation pond area and in a location that is not suspect for contamination. The environmental analytical laboratory test data results will be used for comparison with this SB/TMW.
- 3) Pg. 3/4: OCD requires in addition to the WP that soil sampling occur every 10 ft. from ground surface to the water table. Groundwater sampling at the water table is required.
- 4) Pg. 3/4: The soil and groundwater sampling constituents of concern shall include WQCC Metals. In groundwater, Total Dissolved Solids and pH shall be added to the list. PSH shall be reported within 24 hours of discovery to the OCD.
- 5) Pg. 3/4: Same as No. 1 above. The SB/TMW data results will be compared against each other and the Tables 1 and 2 to develop conclusions. As indicated in No. 1 above, UTLs will not be considered in the evaluation of data. The TMWs shall be properly abandoned per No. 6 below after OCD approves a proposal to PA the TMWs.
- 6) Pg. 3/4 Second Paragraph from Bottom: The WP as proposed with the exception that at least 10 ft. of screen w/ top of screen set ~ 5 ft. above the water table. Also, OCD would like the wells to be pulled out after use w/ bentonite pellets inserted into the borehole to surface and then hydrated to expand.
- 7) Pg. 4/4 Second Paragraph: The constituents of concern list should be similar to No. 4 above.

Please contact me if you have questions. Thank you.

From: Combs, Robert [<u>mailto:Robert.Combs@HollyFrontier.com</u>] Sent: Tuesday, September 01, 2015 10:42 AM To: Chavez, Carl J, EMNRD <<u>CarlJ.Chavez@state.nm.us</u>> Subject: Test 2

Carl,

Please let me know if you receive this file or if it again is encrypted. You should not have to register to read our emails. This is a problem on our end and we will work to resolve it. Thanks,

Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Tuesday, December 08, 2015 5:51 PM
То:	Chavez, Carl J, EMNRD
Cc:	Tsinnajinnie, Leona, NMENV; Denton, Scott; Orosco, Richard
Subject:	2015-12-02 Hydrocarbons to surface in Eagle Draw
Attachments:	2015-12-02 Initial C-141 Hydrocarbons to surface in Eagle Draw.pdf

Carl,

Please see the attached C-141 form. This will be followed by a final report with investigation details, photos, and corrective actions taken.

Please let me know if you'd like to discuss. Thanks,

Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification	on and Co	orrective A	ction			
	OPERA		🛛 Initi	al Report 🔲 Final Report		
Name of CompanyNavajo Refining Company, L.L.C.Address501 E. Main St. Artesia, NM 88210		obert Combs	280			
Facility Name Navajo Refining Company, L.L.C. Artesia		Telephone No. 575-746-5382 Facility Type Refinery				
Surface Owner Mineral Owner	•		API N).		
LOCATIO		LEASE				
Unit Letter Section Township Range Feet from the North	h/South Line	Feet from the	East/West Line	County		
Latitude	Latitude Longitude					
NATURI	E OF REL	EASE				
Type of Release: Visible evidence of hydrocarbons from groundwater	Volume of	Release		Recovered: N/A, Absorbent		
expressed at the ground surface due to elevated water table.	approxima	tely < 1 gallon		material applied to recover/remove		
				hydrocarbon staining from groundwater extrusion onto concrete.		
Source of Release Impacted groundwater		Hour of Occurrence	e Date and	Hour of Discovery		
Was Immediate Notice Given?	12/2/15 U If YES, To	nknown hour	12/2/15@)11:40 am		
Yes No Not Required	I National R	esponse Center a	t 11:50 am			
		a Fe office at 4:50				
By Whom? Gabriela Combs/Robert Combs Was a Watercourse Reached?		Date and Hour please see above If YES, Volume Impacting the Watercourse.				
Yes 🗌 No	< 1 gallon					
If a Watercourse was Impacted, Describe Fully.*						
A small area of stained concrete located at the base of Clark Draw and I	Eagle Draw.					
Describe Cause of Problem and Remedial Action Taken.* A hydrocard	oon stained are	was discovered	hy Refinery perso	nnel in the base of Clark Draw		
on 12/2/15. There is not an active release of hydrocarbons from Refine	ry operations.	There is no hydro	ocarbon sheen pres	ent in the water. The impacts of		
groundwater extrusion are being addressed by removal of hydrocarbons downstream as a precautionary measure to prevent the potential for resi-						
while the remedial action described below is being implemented.	uuai nyurocaro	ons to impact any	nowing condition	s in the water way that hay arise		
Describe Area Affected and Cleanup Action Taken.*						
The stained area was confined to small, specific areas of the concrete. T separated hydrocarbons; if present, a vacuum truck will be used for the	Fhe adjacent re- next several da	covery trench will vs to remove any	l be monitored rou product collected	tinely for evidence of phase		
			-	in the adjustit monitoring wen.		
A final C-141 report will be submitted to OCD and HWB once corrective	ve actions, sam	ple results, etc. ar	e complete.			
I hereby certify that the information given above is true and complete to	the best of my	knowledge and u	inderstand that put	suant to NMOCD rules and		
regulations all operators are required to report and/or file certain release	notifications a	nd perform correc	ctive actions for re	leases which may endanger		
.public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remedi						
or the environment. In addition, NMOCD acceptance of a C-141 report						
federal, state, or local laws and/or regulations.			(IDD) (ATTO)			
Ad Ha		OIL CONSERVATION DIVISION				
Signature: 10400 m	-					
/ Printed Name: Robert Combs	Approved by	Environmental S	pecialist:			
Title: Environmental Specialist	Approval Da	te:	Expiration	Date:		
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval: Attached			Attached		
Date: 12/8/15 Phone: 575-746-5382						
Date: 12/8/15 Phone: 575-746-5382 Attach Additional Sheets If Necessary 12/8/15 12/8/15						

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Tuesday, September 01, 2015 10:42 AM
То:	Chavez, Carl J, EMNRD
Subject:	Test 2
Attachments:	Revised WW line investigation plan.pdf

Carl,

Please let me know if you receive this file or if it again is encrypted. You should not have to register to read our emails. This is a problem on our end and we will work to resolve it.

Thanks,

Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Mr. Scott Denton Environmental Manager Navajo Refining Company, LLC 501 East Main Artesia, New Mexico 88211

Subject:

Revised Potential Soil Response Action Levels for Wastewater Pipeline Break near the Evaporation Ponds Area, Navajo Refining Company Artesia Refinery

Dear Mr. Denton:

ARCADIS is providing this letter discussing potential soil response action levels in relation to the reported release of wastewater that occurred approximately 1500 feet south of the inactive former Evaporation Ponds (EPs) associated with the Navajo Refining Company, L.L.C. (NRC) Artesia Refinery (Refinery). The EPs are a Resource Conservation and Recovery Act (RCRA) regulated unit. Documentation of the information relevant to the release was provided on June 11, 2015. Based on conversations with the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD), the proposed assessment has been revised.

It is our understanding that the release occurred due to a break in the pipeline that conveys treated wastewater from the Refinery to injection wells located approximately 12 miles east of the Refinery. The break occurred approximately three miles east of the Refinery, south of the Evaporation Ponds (Figure 1).

The wastewater that is conveyed through the pipeline is sampled quarterly and analyzed for waste characterization purposes. A copy of the first quarter 2015 wastewater analytical report is provided in Attachment 1 to this letter. The sample was analyzed for total metals, anions, cations, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), corrosivity, reactivity, ignitability, specific conductance, specific gravity, total dissolved solids (TDS), and pH. In addition, the sample was analyzed for eight metals using the toxicity characteristic leaching procedure (TCLP).

The analytical results indicate that the wastewater is not corrosive, not reactive, not ignitable, not toxic (no TCLP metals detected), and contains no VOCs above the New Mexico Water Quality Control Commission (WQCC) standards. The following compounds were reported above the WQCC standards:

ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620 www.arcadis-us.com

ENVIRONMENT

Date: August 21, 2015

Contact: Pamela R. Krueger

Phone: 713.953.4816

Email: pam.krueger@arcadis-us.com

Our ref: TX001155

Imagine the result

g:\env\navajo refining\05.0 general correspondence\navajo\2015\ww line response\revised ww line release near eps-08202015-rev 2.docx

ARCADIS

- Phenol was reported at 0.0081 mg/L, above the WQCC standard of 0.005mg/L
- Iron was reported at 3.7 mg/L, above the WQCC standard of 1.0 mg/L
- Manganese was reported at 0.25 mg/L, above the WQCC standard of 0.2 mg/L
- Chloride was reported at 300 mg/L, above the WQCC standard of 250 mg/L
- Fluoride was reported at 11 mg/L, above the WQCC standard of 1.6 mg/L
- Sulfate was reported at 2,100 mg/L, above the WQCC standard of 600 mg/L
- TDS was reported at 3,710 mg/L, above the WQCC standard of 1,000 mg/L

ARCADIS understands that the OCD requested that a soil investigation and remediation be performed, as well as a limited groundwater investigation.

Although the wastewater sample analytical results do exceed the WQCC standards for water quality parameters, including chloride, it should be noted that the area in which the release occurred is known to have elevated chloride concentrations in soil and groundwater, along with other cations, anions and total metals. In 2013, as part of the Phase IV Corrective Action Investigation of the EPs, ARCADIS collected soil samples from 12 soil borings and analyzed the samples for thirteen total metals and for three anions, including chloride, fluoride, and sulfate. A statistical evaluation of the background soil sample results was performed to determine an appropriate upper tolerance limit (UTL) for the data obtained. A copy of the statistical evaluation memo is provided as Attachment 2 to this letter, including a table with a summary of the UTLs calculated for each parameter evaluated.

Figure 1 shows the locations of the background soil samples collected in 2013 (locations BG-01 through BG-12). The borings were located on both sides of the Pecos River, in locations both to the east and west of the EPs. These areas were selected based on their proximity to the EPs, yet outside of the RCRA-regulated unit and outside of the area of potential impacts from the operation of the EPs. Thus, these soil borings were considered representative of the native conditions of soil in the vicinity of the EPs. As a result, it would be appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release.

As per the OCD requests, soil samples and groundwater samples will be collected as close as possible to the pipeline break and from a location approximately 50 feet to the northwest, or hydraulically upgradient, of the pipeline break. Two soil borings will

ARCADIS

Mr. Scott Denton August 21, 2015

be installed and converted into temporary wells. The proposed locations of these borings/temporary wells are provided on Figure 1.

The soil borings will be installed by a State of New Mexico licensed well driller, using a truck-mounted hollow-stem auger rig. Soil samples will be collected continuously and screened using a photo-ionization detector (PID) and visual observations. Discrete soil samples will be collected for laboratory analysis from the following depths below ground surface: 0-1 feet (surface), 3-4 feet (below the 3 foot deep pipeline), and capillary zone above encountered groundwater. The soil samples will be analyzed for the following:

- Total Petroleum Hydrocarbons (TPH):
 - o Gasoline Range Organics (GRO)
 - Diesel Range Organics (DRO)
 - o Oil Range Organics (ORO)
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- Chloride
- Fluoride
- Sulfate
- Iron
- Manganese
- Phenol

The soil analytical results will be compared to the calculated background UTL (chloride, fluoride, sulfate, iron, and manganese). For parameters that do not have a calculated background UTL, the analytical results will be compared to the lower of the OCD spill cleanup guidelines and/or the residential or soil-leaching-to-groundwater soil screening levels (SSLs) published by the New Mexico Environment Department. Table 1 presents the proposed screening values for the analytical suite.

The soil borings will be extended to five feet below the observed depth of groundwater. The temporary monitoring wells will be constructed of 2-inch polyvinyl chlorinated (PVC) casing with 5 feet of 0.010-inch well screen. Solid 2-inch diameter PVC casing will be attached to the screen interval and extended to the ground surface. Clean sand will be placed in the annular space to approximately 2 feet above the well screen top as filter pack, then a two-foot bentonite seal will be placed above the filter pack. The PVC casing will be cut off approximately 3 feet above the ground surface. Since the wells will be temporary, a manhole and pad will not be installed.

Both temporary wells will be developed by bailing or pumping to remove fine-grained materials. Water quality parameters will be monitored throughout the development process and development will be considered complete when the parameters have

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Mr. Scott Denton August 21, 2015

stabilized. The volume of development water will be recorded and the development water will be disposed of in the refinery process wastewater system.

Groundwater samples will be collected from each of the two temporary monitoring wells, unless there is more than 0.03 feet of phase-separated hydrocarbons (PSH) present in the wells. Groundwater samples will be collected no sooner than 24 hours after the temporary wells have been developed. The groundwater samples will be analyzed for the following:

- TPH (GRO, DRO, ORO)
- BTEX
- Phenol

The groundwater analytical results will be compared to the WQCC standards. The WQCC standards do not include a value for TPH, therefore, the NMED screening value for TPH in groundwater will be used for comparison. Table 2 provides a summary of the groundwater screening values.

A letter report will be prepared and submitted to OCD, documenting the field activities and the analytical results of the investigation. If any of the soil or groundwater results exceed the proposed screening levels, then additional delineation may be warranted and will be proposed in the letter report.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

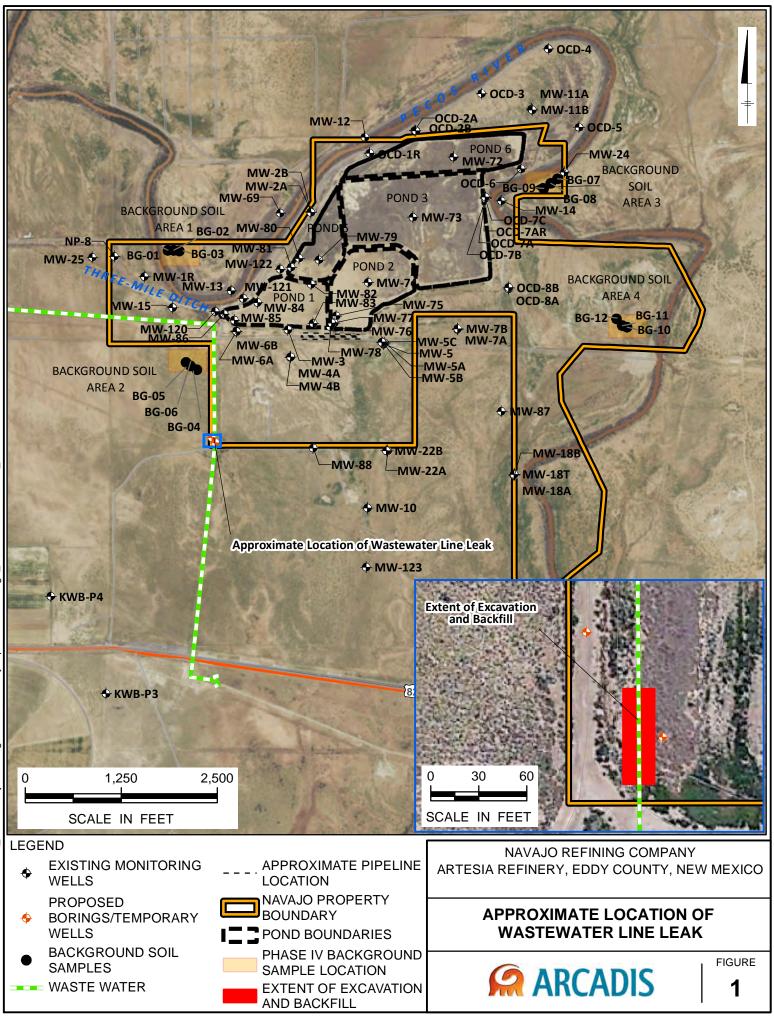
ARCADIS U.S., Inc.

Pamela R. Krueger Principal-in-Charge

Enclosures: Figure 1 Table 1 Table 2 Attachment 1: Wastewater Analytical Report Attachment 2: EP Background Soil Statistical Evaluation Memo



Figure





Tables

Table 1 **Proposed Action Levels for Soil Delineation** Wastewater Line Leak, Artesia, NM

	OCD Spill Guideline ^a	Background UTL	Residential SSL	DAF 20 SSL
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TPH GRO	100			
TPH DRO	100		1000	
TPH ORO	100		1000	
Benzene	10		17.8	0.0380
Ethylbenzene			75.1	0.262
Toluene			5228	12.1
Xylenes			871	2.98
BTEX	50			
Chloride		5264		
Fluoride		17.9		
Sulfate		9336		
Iron		17344		
Manganese		488		
Phenol			18490	52.3

^a Ranking criteria score of >19 based on depth to groundwater Values shaded in grey are the proposed action levels

BTEX = benzene, toluene, ethylbenzene, total xylenes combined

DAF 20 = dilution attenuation factor of 20

DRO = diesel range organics

GRO = gasoline range organics

mg/kg = milligrams per kilogram

ORO = oil range organics

SSL = soil screening level

TPH = total petroleum hydrocarbons

UTL = upper tolerance limit

Table 2

Proposed Action Levels for Groundwater Delineation Wastewater Line Leak, Artesia, NM

Parameter	WQCC Standard (mg/L)	NMED TPH Screening Level (mg/L)
TPH GRO		
TPH DRO		0.2
TPH ORO		0.2
Benzene	0.01	
Ethylbenzene	0.75	
Toluene	0.75	
Xylenes	0.62	
Phenol	0.005	

DRO = diesel range organics

GRO = gasoline range organics

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

ORO = oil range organics

TPH = total petroleum hydrocarbons

WQCC = Water Quality Control Commission



Attachment 1

Wastewater Analytical Report



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

March 25, 2015

Dan Crawford Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159 TEL: (575) 748-3311 FAX

RE: Quarterly WDW-1, 2, &3 Inj Well

OrderNo.: 1502959

Dear Dan Crawford:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/24/2015 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 qualifers 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 #NM0190

Sincerely,

and

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109



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

Case Narrative

WO#:	1502959
Date:	3/25/2015

CLIENT:	Navajo Refining Company
Project:	Quarterly WDW-1, 2, &3 Inj Well

The following compounds were also scanned for by NIST library search and not detected. The detection level for these compounds would be ~10ppb: Allyl alcohol t-amyl ethyl ether Bis(2-chloroethyl)sulfide Bromoacetone Chloral hydrate 1-chlorobutane 1-chlorohexane 2-chloroethanol Crotonaldehyde Cis-1,4-Dichloro-2butene 1,3-Dichloro-2-propanol 1,2,3,4-Depoxybutane Ethanol Ethylene oxide Malonitrile Methanol Methyl acrylate 2-Nitropropane Paraldehyde Pentafluorobenzene 2-Pentanone 2-picoline 1-propanol 2-propanol Propargyl alcohol Beta-propiolactone

n-propylamine

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Project: Quarterly WDW-1, 2, &3 Inj Well 1502959-001 Lab ID:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM

				Heeenvea			
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst	LGT
Fluoride	11	5.0	*	mg/L	50	2/24/2015 11:37:59 PM	R24502
Chloride	300	25		mg/L	50	2/24/2015 11:37:59 PM	R24502
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Bromide	1.1	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	2/24/2015 11:25:35 PM	R24502
Sulfate	2100	25		mg/L	50	2/24/2015 11:37:59 PM	R24502
EPA METHOD 7470: MERCURY						Analyst	MED
Mercury	ND	0.00020		mg/L	1	2/26/2015 9:31:31 AM	17887
MERCURY, TCLP						Analyst	MED
Mercury	ND	0.020		mg/L	1	3/10/2015 8:26:24 AM	18037
EPA METHOD 6010B: TCLP METALS						Analyst	ELS
Arsenic	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Barium	ND	100		mg/L	1	3/7/2015 2:01:03 PM	18024
Cadmium	ND	1.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Chromium	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Lead	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Selenium	ND	1.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Silver	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
EPA 6010B: TOTAL METALS						Analyst	ELS
Aluminum	2.0	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Antimony	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Arsenic	0.029	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Barium	ND	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Beryllium	ND	0.0030		mg/L	1	3/7/2015 1:56:58 PM	18024
Cadmium	ND	0.0020		mg/L	1	3/7/2015 1:56:58 PM	18024
Calcium	85	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Chromium	ND	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Cobalt	ND	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Copper	0.0068	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Iron	3.7	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Lead	ND	0.0050		mg/L	1	3/7/2015 1:56:58 PM	18024
Magnesium	26	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Manganese	0.25	0.0020		mg/L	1	3/7/2015 1:56:58 PM	18024
Nickel	0.035	0.010		mg/L	1	3/7/2015 1:56:58 PM	18024
Potassium	35	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Selenium	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024

Matrix: AQUEOUS

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

Oualifiers: * Value exceeds Maximum Contaminant Level.

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 2 of 25
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Received Date: 2/24/2015 8:00:00 AM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining CompanyProject:Quarterly WDW-1, 2, &3 Inj WellLab ID:1502959-001Matrix: AQUEOUS

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA 6010B: TOTAL METALS					Analyst	ELS	
Silver	ND	0.0050	mg/L	1	3/7/2015 1:56:58 PM	18024	
Sodium	1300	20	mg/L	20	3/10/2015 12:51:05 PM	18050	
Thallium	ND	0.050	mg/L	1	3/7/2015 1:56:58 PM	18024	
Vanadium	ND	0.050	mg/L	1	3/7/2015 1:56:58 PM	18024	
Zinc	0.064	0.020	mg/L	1	3/7/2015 1:56:58 PM	18024	
EPA METHOD 8260B: VOLATILES					Analyst	SUB	
Acetonitrile	ND	5.0	µg/L	1	3/3/2015	R24992	
Allyl chloride	ND	0.50	μg/L	1	3/3/2015	R24992	
Chloroprene	ND	0.50	μg/L	1	3/3/2015	R2499	
Cyclohexane	ND	0.50	μg/L	1	3/3/2015	R24992	
Diethyl ether	ND	0.50	μg/L	1	3/3/2015	R24992	
Diisopropyl ether	ND	0.50	μg/L	1	3/3/2015	R24992	
Epichlorohydrin	ND	5.0	μg/L	1	3/3/2015	R2499	
Ethyl acetate	ND	0.50	μg/L	1	3/3/2015	R2499	
Ethyl methacrylate	ND	2.5	μg/L	1	3/3/2015	R2499	
Ethyl tert-butyl ether	ND	0.50	µg/L	1	3/3/2015	R2499	
Freon-113	ND	0.50	µg/L	1	3/3/2015	R2499	
Isobutanol	ND	50	µg/L	1	3/3/2015	R2499	
Isopropyl acetate	ND	0.50	μg/L	1	3/3/2015	R2499	
Methacrylonitrile	ND	5.0	µg/L	1	3/3/2015	R2499	
Methyl acetate	ND	0.50	µg/L	1	3/3/2015	R2499	
Methyl ethyl ketone	ND	2.5	µg/L	1	3/3/2015	R2499	
Methyl isobutyl ketone	ND	2.5	µg/L	1	3/3/2015	R2499	
Methyl methacrylate	ND	2.5	µg/L	1	3/3/2015	R2499	
Methylcyclohexane	ND	1.0	µg/L	1	3/3/2015	R24992	
n-Amyl acetate	ND	0.50	µg/L	1	3/3/2015	R2499	
n-Hexane	ND	1.0	µg/L	1	3/3/2015	R24992	
Nitrobenzene	ND	5.0	µg/L	1	3/3/2015	R24992	
Pentachloroethane	ND	5.0	µg/L	1	3/3/2015	R2499	
p-isopropyltoluene	1.4	0.50	µg/L	1	3/3/2015	R2499	
Propionitrile	ND	5.0	µg/L	1	3/3/2015	R24992	
Tetrahydrofuran	ND	0.50	µg/L	1	3/3/2015	R24992	
Benzene	ND	0.50	µg/L	1	3/3/2015	R2499	
Toluene	ND	0.50	µg/L	1	3/3/2015	R2499	
Ethylbenzene	ND	0.50	µg/L	1	3/3/2015	R2499	
Methyl tert-butyl ether (MTBE)	ND	10	µg/L	1	3/3/2015	R2499	
1,2,4-Trimethylbenzene	2.8	0.50	µg/L	1	3/3/2015	R24992	
1,3,5-Trimethylbenzene	2.7	0.50	µg/L	1	3/3/2015	R24992	
1,2-Dichloroethane (EDC)	ND	0.50	µg/L	1	3/3/2015	R24992	

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

Qualifiers: * Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
 - Not Detected at the Reporting Limit Page 3 of 25
- P Sample pH Not In Range

ND

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Quarterly WDW-1, 2, &3 Inj Well 1502959-001 Lab ID:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Ana	lyst: SUB
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1	3/3/2015	R2499
Naphthalene	ND	0.50	µg/L	1	3/3/2015	R2499
Acetone	57	2.5	µg/L	1	3/3/2015	R2499
Bromobenzene	ND	0.50	µg/L	1	3/3/2015	R2499
Bromodichloromethane	ND	0.50	µg/L	1	3/3/2015	R2499
Bromoform	ND	0.50	µg/L	1	3/3/2015	R2499
Bromomethane	ND	0.50	µg/L	1	3/3/2015	R2499
Carbon disulfide	0.53	0.50	µg/L	1	3/3/2015	R2499
Carbon Tetrachloride	ND	0.50	µg/L	1	3/3/2015	R2499
Chlorobenzene	ND	0.50	µg/L	1	3/3/2015	R2499
Chloroethane	ND	0.50	µg/L	1	3/3/2015	R2499
Chloroform	ND	0.50	µg/L	1	3/3/2015	R2499
Chloromethane	ND	0.50	µg/L	1	3/3/2015	R2499
2-Chlorotoluene	ND	0.50	µg/L	1	3/3/2015	R2499
4-Chlorotoluene	ND	0.50	μg/L	1	3/3/2015	R2499
cis-1,2-DCE	ND	0.50	μg/L	1	3/3/2015	R249
cis-1,3-Dichloropropene	ND	0.50	μg/L	1	3/3/2015	R249
1,2-Dibromo-3-chloropropane	ND	0.50	μg/L	1	3/3/2015	R249
Dibromochloromethane	ND	0.50	μg/L	1	3/3/2015	R249
Dibromomethane	ND	0.50	μg/L	1	3/3/2015	R249
1,2-Dichlorobenzene	ND	0.50	μg/L	1	3/3/2015	R249
1,3-Dichlorobenzene	ND	0.50	μg/L	1	3/3/2015	R249
1,4-Dichlorobenzene	ND	0.50	μg/L	1	3/3/2015	R249
Dichlorodifluoromethane	ND	0.50	μg/L	1	3/3/2015	R249
1,1-Dichloroethane	ND	0.50	μg/L	1	3/3/2015	R249
1,1-Dichloroethene	ND	0.50	μg/L	1	3/3/2015	R2499
1,2-Dichloropropane	ND	0.50	μg/L	1	3/3/2015	R249
1,3-Dichloropropane	ND	0.50	μg/L	1	3/3/2015	R249
2,2-Dichloropropane	ND	0.50	μg/L	1	3/3/2015	R249
1,1-Dichloropropene	ND	0.50	μg/L	1	3/3/2015	R249
Hexachlorobutadiene	ND	0.50	μg/L	1	3/3/2015	R2499
2-Hexanone	ND	0.50	μg/L	1	3/3/2015	R2499
Isopropylbenzene	ND	0.50	μg/L	1	3/3/2015	R249
Methylene Chloride	ND	2.5	µg/L	1	3/3/2015	R249
n-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R249
n-Propylbenzene	ND	0.50	μg/L	1	3/3/2015	R249
sec-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R249
Styrene	ND	0.50	μg/L	1	3/3/2015	R2499
tert-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R2499

Matrix: AQUEOUS

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

- **Oualifiers:** * Value exceeds Maximum Contaminant Level.
 - Е Value above quantitation range
 - J Analyte detected below quantitation limits
 - 0 RSD is greater than RSDlimit
 - R RPD outside accepted recovery limits
 - Spike Recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 4 of 25
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Quarterly WDW-1, 2, &3 Inj Well

1502959-001

Lab ID:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM Received Date: 2/24/2015 8:00:00 AM

Analyses Result **RL** Oual Units **DF** Date Analyzed Batch Analyst: SUB EPA METHOD 8260B: VOLATILES R24992 1,1,1,2-Tetrachloroethane ND 0.50 µg/L 1 3/3/2015 1,1,2,2-Tetrachloroethane ND 0.50 µg/L 1 3/3/2015 R24992 Tetrachloroethene (PCE) ND 0.50 R24992 µg/L 1 3/3/2015 trans-1,2-DCE ND 0.50 R24992 µg/L 1 3/3/2015 ND trans-1,3-Dichloropropene 0.50 µg/L 1 R24992 3/3/2015 1,2,3-Trichlorobenzene ND 0.50 µg/L 1 3/3/2015 R24992 1,2,4-Trichlorobenzene ND 0.50 µg/L 1 3/3/2015 R24992 1,1,1-Trichloroethane ND 0.50 µg/L 1 3/3/2015 R24992 1,1,2-Trichloroethane ND 0.50 µg/L 1 3/3/2015 R24992 Trichloroethene (TCE) ND 0.50 1 R24992 µg/L 3/3/2015 Trichlorofluoromethane ND 0.50 µg/L 1 3/3/2015 R24992 1,2,3-Trichloropropane ND 0.50 µg/L 1 3/3/2015 R24992 Vinyl chloride ND 0.50 µg/L 1 3/3/2015 R24992 mp-Xylenes 2.4 1.0 µg/L 1 3/3/2015 R24992 o-Xylene 0.50 3/3/2015 1.7 µg/L 1 R24992 0.50 tert-Amyl methyl ether ND µg/L 1 3/3/2015 R24992 tert-Butyl alcohol 21 10 µg/L 1 3/3/2015 R24992 Acrolein ND 0.50 1 R24992 µg/L 3/3/2015 Acrylonitrile ND 0.50 µg/L 1 3/3/2015 R24992 Bromochloromethane ND 0.50 µg/L 1 3/3/2015 R24992 2-Chloroethyl vinyl ether ND 0.50 R24992 µg/L 1 3/3/2015 Iodomethane ND 0.50 µg/L 1 3/3/2015 R24992 trans-1,4-Dichloro-2-butene ND 0.50 1 3/3/2015 R24992 µg/L ND 0.50 3/3/2015 R24992 Vinyl acetate µg/L 1 ND 20 3/3/2015 R24992 1,4-Dioxane µg/L 1 Surr: 1.2-Dichlorobenzene-d4 %REC R24992 110 70-130 1 3/3/2015 Surr: 4-Bromofluorobenzene 100 70-130 %REC 3/3/2015 R24992 1 Surr: Toluene-d8 99.6 70-130 %REC 1 3/3/2015 R24992 EPA 8270C: SEMIVOLATILES/MOD Analyst: SUB 1,1-Biphenyl ND 5.0 µg/L 3/2/2015 R24992 1 ND R24992 Atrazine 5.0 µg/L 1 3/2/2015 R24992 Benzaldehyde ND 5.0 µg/L 1 3/2/2015 Caprolactam ND 5.0 µg/L 1 3/2/2015 R24992 N-Nitroso-di-n-butylamine ND 5.0 µg/L 1 3/2/2015 R24992 Acetophenone ND 10 µg/L 3/2/2015 R24992 1 1-Methylnaphthalene ND 10 µg/L 1 3/2/2015 R24992 2,3,4,6-Tetrachlorophenol ND 10 3/2/2015 R24992 µg/L 1 2,4,5-Trichlorophenol ND 10 µg/L 1 3/2/2015 R24992 2,4,6-Trichlorophenol ND 10 µg/L 1 3/2/2015 R24992

Matrix: AQUEOUS

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

Qualifiers: * Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 5 of 25
- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Quarterly WDW-1, 2, &3 Inj Well 1502959-001 Lab ID:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA 8270C: SEMIVOLATILES/MOD				A	nalyst: SUB
2,4-Dichlorophenol	ND	10	µg/L	1 3/2/2015	R2499
2,4-Dimethylphenol	710	10	µg/L	1 3/2/2015	R2499
2,4-Dinitrophenol	ND	10	µg/L	1 3/2/2015	R2499
2,4-Dinitrotoluene	ND	10	µg/L	1 3/2/2015	R2499
2,6-Dinitrotoluene	ND	10	µg/L	1 3/2/2015	R2499
2-Chloronaphthalene	ND	10	µg/L	1 3/2/2015	R2499
2-Chlorophenol	ND	10	µg/L	1 3/2/2015	R2499
2-Methylnaphthalene	ND	10	µg/L	1 3/2/2015	R2499
2-Methylphenol	480	10	µg/L	1 3/2/2015	R2499
2-Nitroaniline	ND	10	µg/L	1 3/2/2015	R2499
2-Nitrophenol	ND	10	µg/L	1 3/2/2015	R2499
3,3'-Dichlorobenzidine	ND	10	μg/L	1 3/2/2015	R2499
3-Nitroaniline	ND	10	µg/L	1 3/2/2015	R2499
4,6-Dinitro-2-methylphenol	ND	10	μg/L	1 3/2/2015	R2499
4-Bromophenyl phenyl ether	ND	10	μg/L	1 3/2/2015	R2499
4-Chloro-3-methylphenol	ND	5.0	μg/L	1 3/2/2015	R2499
4-Chloroaniline	ND	10	μg/L	1 3/2/2015	R2499
4-Chlorophenyl phenyl ether	ND	10	μg/L	1 3/2/2015	R2499
4-Nitroaniline	ND	10	μg/L	1 3/2/2015	R2499
4-Nitrophenol	ND	10	μg/L	1 3/2/2015	R2499
Acenaphthene	ND	10	μg/L	1 3/2/2015	R2499
Acenaphthylene	ND	10	μg/L	1 3/2/2015	R2499
Anthracene	ND	10	μg/L	1 3/2/2015	R2499
Benzo(g,h,i)perylene	ND	10	μg/L	1 3/2/2015	R2499
Benz(a)anthracene	ND	0.10	μg/L	1 3/2/2015	R2499
Benzo(a)pyrene	ND	0.10	μg/L	1 3/2/2015	R2499
Benzo(b)fluoranthene	ND	0.10	μg/L	1 3/2/2015	R2499
Benzo(k)fluoranthene	ND	0.10	μg/L	1 3/2/2015	R2499
Bis(2-chloroethoxy)methane	ND	10	μg/L	1 3/2/2015	R2499
Bis(2-chloroethyl)ether	ND	10	μg/L	1 3/2/2015	R2499
Bis(2-chloroisopropyl)ether	ND	10	μg/L	1 3/2/2015	R2499
Bis(2-ethylhexyl)phthalate	ND	5.0	μg/L	1 3/2/2015	R2499
Butyl benzyl phthalate	ND	10	μg/L	1 3/2/2015	R2499
Carbazole	ND	10	µg/L	1 3/2/2015	R2499
Chrysene	ND	0.10	µg/L	1 3/2/2015	R2499
Dibenz(a,h)anthracene	ND	0.10	µg/L	1 3/2/2015	R2499
Dibenzofuran	ND	10	μg/L	1 3/2/2015	R2499
Diethyl phthalate	ND	10	μg/L	1 3/2/2015	R2499
Dimethyl phthalate	ND	10	µg/L	1 3/2/2015	R2499

Matrix: AQUEOUS

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

* Value exceeds Maximum Contaminant Level.

Е Value above quantitation range

Oualifiers:

- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 6 of 25
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Received Date: 2/24/2015 8:00:00 AM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company Quarterly WDW-1, 2, &3 Inj Well **Project:** 1502959-001 Matrix: AQUEOUS Lab ID:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM Received Date: 2/24/2015 8:00:00 AM

Result	RL Qu	al Units	DF	Date Analyze	d	Batch
					Analyst:	SUB
ND	10	µg/L	1	3/2/2015		R24992
ND	10	µg/L	1	3/2/2015		R24992
ND	10	µg/L	1	3/2/2015		R24992
ND	10	µg/L	1	3/2/2015		R24992
ND	1.0	µg/L	1	3/2/2015		R24992
ND	10	µg/L	1	3/2/2015		R24992
ND	10	µg/L	1	3/2/2015		R24992
ND	10		1	3/2/2015		R24992
ND	5.0		1	3/2/2015		R24992
ND	10		1	3/2/2015		R2499
ND	10		1	3/2/2015		R2499
ND	10		1	3/2/2015		R2499
ND	10		1	3/2/2015		R2499
ND	2.0		1	3/2/2015		R2499
			1	3/2/2015		R2499
			1	3/2/2015		R2499
			1	3/2/2015		R2499
		µg/L	1	3/2/2015		R2499
		µg/L	1	3/2/2015		R2499
			1	3/2/2015		R2499
			1	3/2/2015		R2499
		%REC	1	3/2/2015		R2499
	19-130	%REC	1	3/2/2015		R2499
	21-110		1	3/2/2015		R2499
	25-130		1	3/2/2015		R2499
			1	3/2/2015		R2499
29.7	21-141	%REC	1	3/2/2015		R2499
					Analyst:	SUB
7.01	0.100	pH Units	1	2/27/2015		R2499
					Analyst:	SUB
>200	0	°F	1	3/6/2015		R24992
					Analyst:	SUB
ND	1.00	mg/L	1	3/5/2015		R24992
					Analyst:	SUB
ND	1.0	mg/L	1	3/3/2015		R24992
					Analyst:	JRR
4600	0.010	µmhos/cm	1	3/3/2015 3:37:2	29 PM	R2462
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND 10 121 10-123 80.8 19-130 83.8 21-110 85.6 25-130 86.4 10-125 29.7 21-141 7.01 0.100 >200 0 <td>ND 10 μg/L ND 5.0 μg/L ND 5.0 μg/L ND 10 μg/L ND 10 μg/L ND 10 μg/L</td> <td>ND 10 $\mu g/L$ 1 ND 10 $\mu g/L$</td> <td>ND 10 $\mu g/L$ 1 $3/2/2015$ ND 5.0 $\mu g/L$ 1 $3/2/2015$ ND 5.0 $\mu g/L$</td> <td>ND 10 µg/L 1 3/2/2015 ND 5.0 µg/L 1 3/2/2015 ND</td>	ND 10 μg/L ND 5.0 μg/L ND 5.0 μg/L ND 10 μg/L ND 10 μg/L ND 10 μg/L	ND 10 $\mu g/L$ 1 ND 10 $\mu g/L$	ND 10 $\mu g/L$ 1 $3/2/2015$ ND 5.0 $\mu g/L$ 1 $3/2/2015$ ND 5.0 $\mu g/L$	ND 10 µg/L 1 3/2/2015 ND 5.0 µg/L 1 3/2/2015 ND

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Qualifiers:

J Analyte detected below quantitation limits

0 RSD is greater than RSDlimit

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits S

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit Page 7 of 25

Р Sample pH Not In Range

RL Reporting Detection Limit

Page 8 of 25

Hall Environmental Analysis Laboratory, Inc.

Quarterly WDW-1, 2, &3 Inj Well

CLIENT: Navajo Refining Company

Project:

Client Sample ID: WDW-1,2,&3 Effluent Collection Date: 2/23/2015 8:30:00 AM Presived Date: 2/24/2015 8:00:00 AM

Lab ID: 1502959-001	Matrix: A	QUEOUS	Received Date: 2/24/2015 8:00:00 AM				
Analyses	Result	RL Qual	Units	DF Date Analyzed Batch			
SM4500-H+B: PH				Analyst: JRR			
рH	7.13	1.68 H	pH units	1 3/3/2015 3:37:29 PM R24621			
SM2320B: ALKALINITY				Analyst: JRR			
Bicarbonate (As CaCO3)	240	20	mg/L CaCO3	1 3/3/2015 3:37:29 PM R24621			
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1 3/3/2015 3:37:29 PM R24621			
Total Alkalinity (as CaCO3)	240	20	mg/L CaCO3	1 3/3/2015 3:37:29 PM R24621			
SPECIFIC GRAVITY				Analyst: JRR			
Specific Gravity	1.002	0		1 3/5/2015 12:07:00 PM R24648			
SM2540C MOD: TOTAL DISSOLVED	SOLIDS			Analyst: KS			
Total Dissolved Solids	3710	200 *	mg/L	1 2/27/2015 8:17:00 AM 17895			

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 Metho	od Blank
	Е	Value above quantitation range	Н	Holding times for preparation or analysis	s exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 8 o
	0	RSD is greater than RSDlimit	Р	Sample pH Not In Range	1 age 0 t
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report Lab Order 1502959

Date Reported: 3/25/2015

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: TRIP BLANK Collection Date:

Project: Quarterly WDW-1, 2, &3 Inj Well 1502959-002 Lab ID:

CLIENT: Navajo Refining Company

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyze	d Batch
EPA METHOD 8260B: VOLATILES						Analyst: SUB
Acetonitrile	ND	5.0	µg/L	1	3/3/2015	R24992
Allyl chloride	ND	0.50	µg/L	1	3/3/2015	R24992
Chloroprene	ND	0.50	µg/L	1	3/3/2015	R24992
Cyclohexane	ND	0.50	µg/L	1	3/3/2015	R24992
Diethyl ether	ND	0.50	µg/L	1	3/3/2015	R24992
Diisopropyl ether	ND	0.50	µg/L	1	3/3/2015	R24992
Epichlorohydrin	ND	5.0	µg/L	1	3/3/2015	R24992
Ethyl acetate	ND	0.50	µg/L	1	3/3/2015	R24992
Ethyl methacrylate	ND	2.5	µg/L	1	3/3/2015	R24992
Ethyl tert-butyl ether	ND	0.50	µg/L	1	3/3/2015	R24992
Freon-113	ND	0.50	µg/L	1	3/3/2015	R24992
Isobutanol	ND	0.50	µg/L	1	3/3/2015	R24992
Isopropyl acetate	ND	0.50	µg/L	1	3/3/2015	R24992
Methacrylonitrile	ND	2.5	µg/L	1	3/3/2015	R24992
Methyl acetate	ND	0.50	µg/L	1	3/3/2015	R24992
Methyl ethyl ketone	ND	2.5	µg/L	1	3/3/2015	R24992
Methyl isobutyl ketone	ND	2.5	µg/L	1	3/3/2015	R24992
Methyl methacrylate	ND	2.5	µg/L	1	3/3/2015	R24992
Methylcyclohexane	ND	1.0	µg/L	1	3/3/2015	R24992
n-Amyl acetate	ND	0.50	µg/L	1	3/3/2015	R24992
n-Hexane	ND	1.0	µg/L	1	3/3/2015	R24992
Nitrobenzene	ND	5.0	µg/L	1	3/3/2015	R24992
Pentachloroethane	ND	5.0	µg/L	1	3/3/2015	R24992
p-isopropyltoluene	ND	0.50	µg/L	1	3/3/2015	R24992
Propionitrile	ND	5.0	µg/L	1	3/3/2015	R24992
Tetrahydrofuran	ND	0.50	µg/L	1	3/3/2015	R24992
Benzene	ND	0.50	µg/L	1	3/3/2015	R24992
Toluene	ND	0.50	µg/L	1	3/3/2015	R24992
Ethylbenzene	ND	0.50	µg/L	1	3/3/2015	R24992
Methyl tert-butyl ether (MTBE)	ND	10	µg/L	1	3/3/2015	R24992
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1	3/3/2015	R24992
1,3,5-Trimethylbenzene	ND	0.50	μg/L	1	3/3/2015	R24992
1,2-Dichloroethane (EDC)	ND	0.50	μg/L	1	3/3/2015	R24992
1,2-Dibromoethane (EDB)	ND	0.50	μg/L	1	3/3/2015	R24992
Naphthalene	ND	0.50	μg/L	1	3/3/2015	R24992
Acetone	5.0	2.5	μg/L	1	3/3/2015	R24992
Bromobenzene	ND	0.50	μg/L	1	3/3/2015	R24992
Bromodichloromethane	ND	0.50	µg/L	1	3/3/2015	R24992
Bromoform	ND	0.50	µg/L	1	3/3/2015	R24992

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

Oualifiers: * Value exceeds Maximum Contaminant Level.

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 9 of 25
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Matrix: TRIP BLANK

Analytical Report Lab Order 1502959

Date Reported: 3/25/2015

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: TRIP BLANK Collection Date:

Project: Quarterly WDW-1, 2, &3 Inj Well 1502959-002 Lab ID:

CLIENT: Navajo Refining Company

Analyses	Result	RL Qu	al Units	DF	Date Analyze	d Batch
EPA METHOD 8260B: VOLATILES						Analyst: SUB
Bromomethane	ND	0.50	µg/L	1	3/3/2015	R24992
Carbon disulfide	ND	0.50	µg/L	1	3/3/2015	R24992
Carbon Tetrachloride	ND	0.50	µg/L	1	3/3/2015	R24992
Chlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992
Chloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
Chloroform	ND	0.50	µg/L	1	3/3/2015	R24992
Chloromethane	ND	0.50	µg/L	1	3/3/2015	R24992
2-Chlorotoluene	ND	0.50	µg/L	1	3/3/2015	R24992
4-Chlorotoluene	ND	0.50	µg/L	1	3/3/2015	R24992
cis-1,2-DCE	ND	0.50	µg/L	1	3/3/2015	R24992
cis-1,3-Dichloropropene	ND	0.50	µg/L	1	3/3/2015	R24992
1,2-Dibromo-3-chloropropane	ND	0.50	µg/L	1	3/3/2015	R24992
Dibromochloromethane	ND	0.50	µg/L	1	3/3/2015	R24992
Dibromomethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,2-Dichlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992
1,3-Dichlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992
1,4-Dichlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992
Dichlorodifluoromethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,1-Dichloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,1-Dichloroethene	ND	0.50	µg/L	1	3/3/2015	R24992
1,2-Dichloropropane	ND	0.50	µg/L	1	3/3/2015	R24992
1,3-Dichloropropane	ND	0.50	µg/L	1	3/3/2015	R24992
2,2-Dichloropropane	ND	0.50	µg/L	1	3/3/2015	R24992
1,1-Dichloropropene	ND	0.50	µg/L	1	3/3/2015	R24992
Hexachlorobutadiene	ND	0.50	μg/L	1	3/3/2015	R24992
2-Hexanone	ND	0.50	µg/L	1	3/3/2015	R24992
Isopropylbenzene	ND	0.50	μg/L	1	3/3/2015	R24992
Methylene Chloride	ND	2.5	µg/L	1	3/3/2015	R24992
n-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R24992
n-Propylbenzene	ND	0.50	µg/L	1	3/3/2015	R24992
sec-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R24992
Styrene	ND	0.50	μg/L	1	3/3/2015	R24992
tert-Butylbenzene	ND	0.50	μg/L	1	3/3/2015	R24992
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
Tetrachloroethene (PCE)	ND	0.50	μg/L	1	3/3/2015	R24992
trans-1,2-DCE	ND	0.50	µg/L	1	3/3/2015	R24992
trans-1,3-Dichloropropene	ND	0.50	μg/L	1	3/3/2015	R24992
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992

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

Oualifiers: * Value exceeds Maximum Contaminant Level.

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 10 of 25
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Matrix: TRIP BLANK Received Date: 2/24/2015 8:00:00 AM

Analytical Report Lab Order 1502959

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 3/25/2015

Client Sample ID: TRIP BLANK Collection Date:

 Project:
 Quarterly WDW-1, 2, &3 Inj Well

 Lab ID:
 1502959-002
 M

CLIENT: Navajo Refining Company

Matrix: TRIP BLANK Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyze	ed Batch
EPA METHOD 8260B: VOLATILES						Analyst: SUB
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1	3/3/2015	R24992
1,1,1-Trichloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,1,2-Trichloroethane	ND	0.50	µg/L	1	3/3/2015	R24992
Trichloroethene (TCE)	ND	0.50	µg/L	1	3/3/2015	R24992
Trichlorofluoromethane	ND	0.50	µg/L	1	3/3/2015	R24992
1,2,3-Trichloropropane	ND	0.50	µg/L	1	3/3/2015	R24992
Vinyl chloride	ND	0.50	µg/L	1	3/3/2015	R24992
mp-Xylenes	ND	1.0	µg/L	1	3/3/2015	R24992
o-Xylene	ND	0.50	µg/L	1	3/3/2015	R24992
tert-Amyl methyl ether	ND	0.50	µg/L	1	3/3/2015	R24992
tert-Butyl alcohol	ND	10	µg/L	1	3/3/2015	R24992
Acrolein	ND	1.0	µg/L	1	3/3/2015	R24992
Acrylonitrile	ND	0.50	µg/L	1	3/3/2015	R24992
Bromochloromethane	ND	0.50	µg/L	1	3/3/2015	R24992
2-Chloroethyl vinyl ether	ND	0.50	µg/L	1	3/3/2015	R24992
lodomethane	ND	0.50	µg/L	1	3/3/2015	R24992
trans-1,4-Dichloro-2-butene	ND	0.50	µg/L	1	3/3/2015	R24992
Vinyl acetate	ND	0.50	µg/L	1	3/3/2015	R24992
1,4-Dioxane	ND	20	µg/L	1	3/3/2015	R24992
Surr: 1,2-Dichlorobenzene-d4	102	70-130	%REC	1	3/3/2015	R24992
Surr: 4-Bromofluorobenzene	98.4	70-130	%REC	1	3/3/2015	R24992
Surr: Toluene-d8	100	70-130	%REC	1	3/3/2015	R24992

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

Qualifiers: * Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
 - Not Detected at the Reporting Limit Page 11 of 25
- P Sample pH Not In Range

ND

RL Reporting Detection Limit

					1302939					
Hall Environment	al Anal	ysis I	Laborat	ory, Inc.						25-Mar-15
•	Refining Co ly WDW-1,									
Sample ID MB	Samp	Гуре: МВ	BLK	Tes	tCode: E	PA Method	300.0: Anion	5		
Client ID: PBW	Batc	h ID: R2	24502	F	RunNo: 2	4502				
Prep Date:	Analysis [Date: 2/	/24/2015	S	SeqNo: 7	21446	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Sample ID LCS	Samp	Гуре: LC	s	Tes	tCode: E	PA Method	300.0: Anion	6		
Client ID: LCSW	Batc	h ID: R2	24502	F	RunNo: 2	4502				
Prep Date:	Analysis [Date: 2/	/24/2015	S	SeqNo: 7	21447	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.8	0.50	5.000	0	95.3	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	99.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	100	90	110			

0

97.6

90

110

10.00

9.8

0.50

Qualifiers:

Sulfate

* Value exceeds Maximum Contaminant Level.

QC SUMMARY REPORT

- Е Value above quantitation range
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- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - Reporting Detection Limit RL

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WO#: 1502959

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959 25-Mar-15

Sample ID MB-R24992		ype: ME					8260B: VOL	ATILES		
Client ID: PBW	Batch	n ID: R2	4992	F	RunNo: 2	24992				
Prep Date:	Analysis D	ate: 3/	3/2015	S	SeqNo: 7	736964	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acetonitrile	ND	0.50								
Allyl chloride	ND	0.50								
Chloroprene	ND	0.50								
Ethyl methacrylate	ND	0.50								
Isobutanol	ND	0.50								
Methacrylonitrile	ND	0.50								
Methyl ethyl ketone	ND	2.5								
Methyl isobutyl ketone	ND	2.5								
Methyl methacrylate	ND	0.50								
Propionitrile	ND	0.50								
Benzene	ND	0.50								
Toluene	ND	0.50								
Ethylbenzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
1,2-Dibromoethane (EDB)	ND	0.50								
Acetone	ND	2.5								
Bromodichloromethane	ND	0.50								
Bromoform	ND	0.50								
Bromomethane	ND	0.50								
		0.50								
Carbon disulfide	ND									
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	0.50								
Chloroethane	ND	0.50								
Chloroform	ND	0.50								
Chloromethane	ND	0.50								
cis-1,2-DCE	ND	0.50								
cis-1,3-Dichloropropene	ND	0.50								
1,2-Dibromo-3-chloropropane	ND	0.50								
Dibromochloromethane	ND	0.50								
Dibromomethane	ND	0.50								
1,2-Dichlorobenzene	ND	0.50								
1,4-Dichlorobenzene	ND	0.50								
Dichlorodifluoromethane	ND	0.50								
1,1-Dichloroethane	ND	0.50								
1,1-Dichloroethene	ND	0.50								
1,2-Dichloropropane	ND	0.50								
1,3-Dichloropropane	ND	0.50								
2,2-Dichloropropane	ND	0.50								
1,1-Dichloropropene	ND	0.50								

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- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

WO#: 1502959 25-Mar-15

Client:	Navajo Refining Company
Project:	Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-R24992	SampT	уре: М	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	n ID: R2	4992	F	RunNo: 24	4992				
Prep Date:	Analysis D)ate: 3/	3/2015	S	eqNo: 7	36964	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	0.50								
Methylene Chloride	ND	2.5								
Styrene	ND	0.50								
1,1,1,2-Tetrachloroethane	ND	0.50								
1,1,2,2-Tetrachloroethane	ND	0.50								
Tetrachloroethene (PCE)	ND	0.50								
trans-1,2-DCE	ND	0.50								
trans-1,3-Dichloropropene	ND	0.50								
1,1,1-Trichloroethane	ND	0.50								
1,1,2-Trichloroethane	ND	0.50								
Trichloroethene (TCE)	ND	0.50								
Trichlorofluoromethane	ND	0.50								
1,2,3-Trichloropropane	ND	0.50								
Vinyl chloride	ND	0.50								
mp-Xylenes	ND	1.0								
o-Xylene	ND	0.50								
Acrolein	ND	0.50								
Acrylonitrile	ND	0.50								
Bromochloromethane	ND	0.50								
Iodomethane	ND	0.50								
trans-1,4-Dichloro-2-butene	ND	0.50								
Vinyl acetate	ND	0.50								
Sample ID LCS-R24992	SampT	ype: LC	s	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch	n ID: R2	4992	F	RunNo: 2	4992				
Prep Date:	Analysis D)ate: 3/	3/2015	S	SeqNo: 7	36965	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	9.8		10.00	0	98.4	80	120			
Toluene	10		10.00	0	99.8	80	120			
Ethylbenzene	10		10.00	0	101	80	120			
Chlorobenzene	9.8		10.00	0	98.5	80	120			

Qualifiers:

o-Xylene

1,1-Dichloroethene

Tetrachloroethene (PCE)

Trichloroethene (TCE)

Value exceeds Maximum Contaminant Level. *

9.2

9.8

9.6

10

10.00

10.00

10.00

10.00

0

0

0

0

91.7

98.4

96.1

104

80

80

80

80

120

120

120

120

- Е Value above quantitation range
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- S Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Р Sample pH Not In Range
- Reporting Detection Limit RL

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WO#: 1502959 25-Mar-15

Qual

•	Refining Co ly WDW-1,		nj Well						
Sample ID MB-R24992	SampT	уре: МВ	LK	Test	tCode: El	PA 8270C:	Semivolatiles	/Mod	
Client ID: PBW	Batch	ID: R24	4992	R	unNo: 2	4992			
Prep Date:	Analysis D				eqNo: 7		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit
Acetophenone	ND	10					0		
1-Methylnaphthalene	ND	10							
2,3,4,6-Tetrachlorophenol	ND	10							
2,4,5-Trichlorophenol	ND	10							
2,4,6-Trichlorophenol	ND	10							
2,4-Dichlorophenol	ND	10							
2,4-Dimethylphenol	ND	10							
2,4-Dinitrophenol	ND	10							
2,4-Dinitrotoluene	ND	10							
2,6-Dinitrotoluene	ND	10							
2-Chloronaphthalene	ND	10							
2-Chlorophenol	ND	10							
2-Methylnaphthalene	ND	10							
2-Methylphenol	ND	10							
2-Nitroaniline	ND	10							
2-Nitrophenol	ND	10							
3,3 [°] -Dichlorobenzidine	ND	10							
3-Nitroaniline	ND	10							
4,6-Dinitro-2-methylphenol	ND	10							
4-Bromophenyl phenyl ether	ND	10							
4-Chloro-3-methylphenol	ND	5.0							
4-Chloroaniline	ND	10							
4-Chlorophenyl phenyl ether	ND	10							
4-Nitroaniline	ND	10							
4-Nitrophenol	ND	10							
Acenaphthene	ND	10							
Acenaphthylene	ND	10							
Anthracene	ND	10							
Benzo(g,h,i)perylene	ND	10							
Benz(a)anthracene	ND	0.10							
Benzo(a)pyrene	ND	0.10							
Benzo(b)fluoranthene	ND	0.10							
Benzo(k)fluoranthene	ND	0.10							
Bis(2-chloroethoxy)methane	ND	10							
Bis(2-chloroethyl)ether	ND	10							
Bis(2-chloroisopropyl)ether	ND	10							
Bis(2-ethylhexyl)phthalate	ND	5.0							
Butyl benzyl phthalate	ND	10							
Carbazole	ND	10							

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WO#: 1502959 25-Mar-15

Client:	Navajo Refining Company
Project:	Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-R24992	SampType: MBLK		Tes							
Client ID: PBW	Batch ID: R24992		F	RunNo: 24992						
Prep Date:	Analysis D	Date: 3/	2/2015	S	eqNo: 7	36968	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	ND	0.10								
Dibenz(a,h)anthracene	ND	0.10								
Dibenzofuran	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	1.0								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Isophorone	ND	10								
Naphthalene	ND	10								
Nitrobenzene	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
Pentachlorophenol	ND	10								
Phenanthrene	ND	1.0								
Phenol	ND	5.0								
Pyrene	ND	10								
1,2,4,5-Tetrachlorobenzene	ND	10								

Sample ID LCS-R24992	SampType: LCS		TestCode: EPA 8270C: Semivolatiles/Mod							
Client ID: LCSW	Batch	n ID: R2	4992	F	RunNo: 2	4992				
Prep Date:	Analysis D	ate: 3/	2/2015	S	SeqNo: 7	36969	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	5.6		5.000	0	112	49	134			
2-Chlorophenol	4.7		5.000	0	94.8	50	131			
4-Chloro-3-methylphenol	4.2		5.000	0	83.0	42	139			
4-Nitrophenol	2.8		5.000	0	56.8	19	137			
Acenaphthene	5.3		5.000	0	106	36	122			
Bis(2-ethylhexyl)phthalate	5.4		5.000	0	109	43	142			
N-Nitrosodi-n-propylamine	5.3		5.000	0	107	46	135			
Pentachlorophenol	4.0		5.000	0	79.4	22	138			
Phenol	4.1		5.000	0	81.2	45	134			
Pyrene	6.2		5.000	0	123	45	138			

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- RL Reporting Detection Limit

WO#:	1502959
	25-Mar-15

Client: Project:		jo Refining Company terly WDW-1, 2, &3 Inj Well		
Sample ID	MB-17887	SampType: MBLK	TestCode: EPA Method 7470: I	Mercury
Client ID:	PBW	Batch ID: 17887	RunNo: 24523	
Prep Date:	2/25/2015	Analysis Date: 2/26/2015	SeqNo: 722178 Units:	mg/L
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit HighL	Limit %RPD RPDLimit Qual
Mercury		ND 0.00020		
Sample ID	LCS-17887	SampType: LCS	TestCode: EPA Method 7470: I	Mercury
Client ID:	LCSW	Batch ID: 17887	RunNo: 24523	
Prep Date:	2/25/2015	Analysis Date: 2/26/2015	SeqNo: 722179 Units:	mg/L
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit HighL	Limit %RPD RPDLimit Qual
Mercury		0.0051 0.00020 0.005000	0 102 80	120

Qualifiers:

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 - Reporting Detection Limit RL

WO#:	1502959
	25_Mar_15

25-Mar-15

Client: Project:		ajo Refining Co rterly WDW-1,	1 .	Inj Well							
Sample ID	MB-18037	SampT	ype: ME	BLK	Tes	tCode: M	ERCURY, T	CLP			
Client ID:	PBW	Batch	n ID: 18	037	F	RunNo: 24	4714				
Prep Date:	3/9/2015	Analysis D	ate: 3/	10/2015	5	SeqNo: 7	28042	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.020								
Sample ID	LCS-18037	SampT	ype: LC	S	Tes	tCode: M	ERCURY, T	CLP			
Client ID:	LCSW	Batch	n ID: 18	037	F	RunNo: 24	4714				
Prep Date:	3/9/2015	Analysis D	ate: 3/	10/2015	5	SeqNo: 7	28043	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.020	0.005000	0	105	80	120			

Qualifiers:

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WO#: **1502959**

25-Mar-15

Client:	Navajo Refining Company
Project:	Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-18024	Samp	Туре: МЕ	BLK	Test	tCode: El	PA 6010B:	Total Metals			
Client ID: PBW	Bato	h ID: 18	024	R	unNo: 2	4683				
Prep Date: 3/6/2015	Analysis I	Date: 3/	7/2015	S	eqNo: 7	27309	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Antimony	ND	0.050								
Arsenic	ND	0.020								
Barium	ND	0.020								
Beryllium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Selenium	ND	0.050								
Silver	ND	0.0050								
Thallium	ND	0.050								
	ND	0.050								
	ND ND	0.050 0.020								
Zinc Sample ID LCS-18024	ND Samp	0.020 Type: LC					Total Metals			
Zinc	ND Samp	0.020			Code: El		Total Metals			
Zinc Sample ID LCS-18024	ND Samp	0.020 Type: LC ch ID: 18	024	R		4683	Total Metals Units: mg/L			
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte	ND Samp Bato Analysis I Result	0.020 Type: LC th ID: 18 Date: 3/ PQL	024 7/2015 SPK value	R S SPK Ref Val	aunNo: 24 SeqNo: 73 %REC	4683 27310 LowLimit	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum	ND Samp Bato Analysis I Result 0.48	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020	024 7/2015 SPK value 0.5000	R S SPK Ref Val 0	2000 2000 2000 2000 2000 2000 2000 200	4683 27310 LowLimit 80	Units: mg/L HighLimit 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony	ND Samp Bato Analysis I Result 0.48 0.52	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.050	024 7/2015 SPK value 0.5000 0.5000	R S SPK Ref Val 0 0	2000 RunNo: 20 SeqNo: 72 %REC 95.4 104	4683 27310 LowLimit 80 80	Units: mg/L HighLimit 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic	ND Samp Bato Analysis I Result 0.48 0.52 0.47	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.050 0.020	024 7/2015 SPK value 0.5000 0.5000 0.5000	R S SPK Ref Val 0 0 0	2000 RunNo: 20 2000 2000	4683 27310 LowLimit 80 80 80	Units: mg/L HighLimit 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.020	024 7/2015 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0	2000 RunNo: 20 30 SeqNo: 72 30 SeqNo: 72	4683 27310 LowLimit 80 80 80 80	Units: mg/L HighLimit 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium	ND Samp Bato Analysis Result 0.48 0.52 0.47 0.49 0.50	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.050 0.020 0.020 0.020 0.0030	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0	2000 2000 2000 2000 2000 2000 2000 200	4683 27310 LowLimit 80 80 80 80 80 80	Units: mg/L HighLimit 120 120 120 120 120	%RPD	RPDLimit	Qual
Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium	ND Samp Batc Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.050 0.020 0.020 0.0030 0.0020	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0	RunNo: 24 ieqNo: 7 <u>%REC</u> 95.4 104 93.5 97.1 99.1 96.1	4683 27310 LowLimit 80 80 80 80 80 80 80	Units: mg/L HighLimit 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0030 0.0020 0.0020 0.0060	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0	RunNo: 24 ieqNo: 7 <u>%REC</u> 95.4 104 93.5 97.1 99.1 96.1 97.8	4683 27310 LowLimit 80 80 80 80 80 80 80 80	Units: mg/L HighLimit 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.49 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0030 0.0020 0.0060 0.0060	024 7/2015 8PK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 2 GeqNo: 7 %REC 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4	4683 27310 LowLimit 80 80 80 80 80 80 80 80 80 80	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.49 0.49 0.49 0.52	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060	024 7/2015 8PK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 2 SeqNo: 7 %REC 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105	4683 27310 2000 2000 2000 2000 2000 2000 2000 2	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.49 0.49 0.52 0.51	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060 0.0060 0.0060	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 24 SeqNo: 73 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105 102	4683 27310 2000 2000 2000 2000 2000 2000 2000 2	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead	ND Samp Bato Analysis I Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.49 0.49 0.52 0.51 0.48	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060 0.0060 0.0050	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 24 SeqNo: 73 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105 102 97.0	4683 27310 2000 2000 2000 2000 2000 2000 2000 2	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Manganese	ND Samp Bato Analysis Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.52 0.51 0.48 0.49 0.52 0.51 0.48 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060 0.0060 0.0050 0.0050 0.0020	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 24 ieqNo: 7 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105 102 97.0 98.6	4683 27310 2000 2000 2000 2000 2000 2000 2000 2	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Manganese Nickel	ND Samp Bato Analysis Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.49 0.52 0.51 0.48 0.49 0.52 0.51 0.48 0.49 0.49 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060 0.0050 0.0050 0.0050 0.0020 0.0020 0.0010	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 24 ieqNo: 7 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105 102 97.0 98.6 98.6	4683 27310 LowLimit 80 80 80 80 80 80 80 80 80 80 80 80 80	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual
Zinc Sample ID LCS-18024 Client ID: LCSW Prep Date: 3/6/2015 Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Manganese	ND Samp Bato Analysis Result 0.48 0.52 0.47 0.49 0.50 0.48 0.49 0.52 0.51 0.48 0.49 0.52 0.51 0.48 0.49	0.020 Type: LC th ID: 18 Date: 3/ PQL 0.020 0.020 0.020 0.0020 0.0020 0.0060 0.0060 0.0060 0.0060 0.0050 0.0050 0.0020	024 7/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RunNo: 24 ieqNo: 7 95.4 104 93.5 97.1 99.1 96.1 97.8 97.4 105 102 97.0 98.6	4683 27310 2000 2000 2000 2000 2000 2000 2000 2	Units: mg/L HighLimit 120 120 120 120 120 120 120 120 120 120	%RPD	RPDLimit	Qual

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Navajo Refining Company

WO#:

Project:	Quart	, , , , , , , , , , , , , , , , , , ,									
Sample ID	LCS-18024 SampType: LCS			Tes	tCode: EF	PA 6010B: 1	Fotal Metals				
Client ID:	LCSW	LCSW Batch ID: 18024		F	RunNo: 24	4683					
Prep Date:	3/6/2015	Analysis D	ate: 3/	7/2015	S	SeqNo: 72	27310	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium		0.48	0.050	0.5000	0	97.0	80	120			
Vanadium		0.49	0.050	0.5000	0	98.2	80	120			
Zinc		0.48	0.020	0.5000	0	95.1	80	120			
Sample ID	1502959-001B	MS SampT	уре: М	6	Tes	tCode: EF	PA 6010B: 1	Fotal Metals			
Client ID:	WDW-1,2,&3 E	Effluen Batch	n ID: 18	050	F	RunNo: 24	4731				
Prep Date:	3/9/2015	Analysis D	ate: 3/	10/2015	S	SeqNo: 72	28505	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium		76	1.0	50.00	25.84	101	75	125			
Potassium		84	1.0	50.00	34.66	98.8	75	125			
Sample ID	1502959-001B	MSD SampT	ype: MS	SD	Tes	tCode: EF	PA 6010B: 1	Fotal Metals			
Olivert				RunNo: 24731							
Client ID:	WDW-1,2,&3 E	Effluen Batch	n ID: 18	050	F	kunino: 24	+/31				
Client ID: Prep Date:		Effluen Batch Analysis D				SeqNo: 7		Units: mg/L			
				10/2015				Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Prep Date: Analyte		Analysis D	ate: 3/	10/2015	S	SeqNo: 72	28506	•	%RPD 1.52	RPDLimit 20	Qual
Prep Date: Analyte Magnesium		Analysis D Result	Date: 3/	10/2015 SPK value	SPK Ref Val	SeqNo: 72 %REC	28506 LowLimit	HighLimit			Qual
Prep Date: Analyte Magnesium	3/9/2015	Analysis D Result 75 86	Date: 3/ PQL 1.0	10/2015 SPK value 50.00 50.00	SPK Ref Val 25.84 34.66	SeqNo: 72 %REC 98.6 102	28506 LowLimit 75 75	HighLimit 125	1.52	20	Qual
Prep Date: Analyte Magnesium Potassium Sample ID	3/9/2015	Analysis D Result 75 86 SampT	Date: 3/ PQL 1.0 1.0	SPK value 50.00 50.00 BLK	SPK Ref Val 25.84 34.66 Tes	SeqNo: 72 %REC 98.6 102	28506 LowLimit 75 75 PA 6010B:	HighLimit 125 125	1.52	20	Qual
Prep Date: Analyte Magnesium Potassium Sample ID	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT	Pate: 3/ PQL 1.0 1.0 Type: ME 1 ID: 18	10/2015 SPK value 50.00 50.00 BLK 050	SPK Ref Val 25.84 34.66 Tes F	SeqNo: 72 %REC 98.6 102 tCode: EF	28506 LowLimit 75 75 PA 6010B: 7 4731	HighLimit 125 125	1.52	20	Qual
Prep Date: Analyte Magnesium Potassium Sample ID Client ID:	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch	Pate: 3/ PQL 1.0 1.0 Type: ME 1 ID: 18	10/2015 SPK value 50.00 50.00 BLK 050 10/2015	SPK Ref Val 25.84 34.66 Tes F	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72	28506 LowLimit 75 75 PA 6010B: 7 4731	HighLimit 125 125 Total Metals	1.52	20	Qual
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch Analysis D	Pate: 3/ PQL 1.0 1.0 ype: ME DD: 18 pate: 3/	10/2015 SPK value 50.00 50.00 BLK 050 10/2015	SPK Ref Val 25.84 34.66 Tes F S	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72	28506 LowLimit 75 75 PA 6010B: 7 4731 28508	HighLimit 125 125 Total Metals Units: mg/L	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME D ID: 18 Date: 3/ PQL 1.0 1.0	10/2015 SPK value 50.00 50.00 BLK 050 10/2015	SPK Ref Val 25.84 34.66 Tes F S	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72	28506 LowLimit 75 75 PA 6010B: 7 4731 28508	HighLimit 125 125 Total Metals Units: mg/L	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME D ID: 18 Date: 3/ PQL 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 BLK 050 10/2015	SPK Ref Val 25.84 34.66 Tes F S	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72	28506 LowLimit 75 75 PA 6010B: 7 4731 28508	HighLimit 125 125 Total Metals Units: mg/L	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME D ID: 18 Date: 3/ PQL 1.0 1.0	10/2015 SPK value 50.00 50.00 BLK 050 10/2015	SPK Ref Val 25.84 34.66 Tes F S	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72	28506 LowLimit 75 75 PA 6010B: 7 4731 28508	HighLimit 125 125 Total Metals Units: mg/L	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium Sodium	3/9/2015 MB-18050 PBW	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME D ID: 18 Date: 3/ PQL 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value	SPK Ref Val 25.84 34.66 Tes SPK Ref Val	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72 %REC	28506 LowLimit 75 75 PA 6010B: ⁻ 4731 28508 LowLimit	HighLimit 125 125 Total Metals Units: mg/L	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium Sodium	3/9/2015 MB-18050 PBW 3/9/2015	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND ND ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME D ID: 18 Date: 3/ PQL 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value SS	SPK Ref Val 25.84 34.66 Tes SPK Ref Val	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72 %REC	28506 LowLimit 75 75 PA 6010B: - 4731 28508 LowLimit PA 6010B: -	HighLimit 125 125 Fotal Metals Units: mg/L HighLimit	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium Sodium	3/9/2015 MB-18050 PBW 3/9/2015 LCS-18050	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND ND ND ND	Pate: 3/ PQL 1.0 1.0 Type: ME 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value SPK value	SPK Ref Val 25.84 34.66 Tes SPK Ref Val	SeqNo: 72 %REC 98.6 102 tCode: EF &unNo: 24 SeqNo: 72 %REC tCode: EF	28506 LowLimit 75 75 PA 6010B: - 4731 28508 LowLimit PA 6010B: - 4731	HighLimit 125 125 Fotal Metals Units: mg/L HighLimit	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium Sodium Sample ID Client ID:	3/9/2015 MB-18050 PBW 3/9/2015 LCS-18050 LCSW	Analysis D Result 75 86 SampT Batch Analysis D Result ND ND ND ND ND ND SampT Batch	Pate: 3/ PQL 1.0 1.0 Type: ME 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value 10/2015 SPK value	SPK Ref Val 25.84 34.66 Tes SPK Ref Val	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72 %REC tCode: EF RunNo: 24 SeqNo: 72 %REC	28506 LowLimit 75 75 PA 6010B: - 4731 28508 LowLimit PA 6010B: - 4731	Fotal Metals Units: mg/L HighLimit Units: mg/L HighLimit Units: mg/L HighLimit	1.52 1.89	20 20	
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Sample ID Client ID: Prep Date: Analyte Calcium	3/9/2015 MB-18050 PBW 3/9/2015 LCS-18050 LCSW	Analysis D Result 75 86 SampT Batch Analysis D ND ND ND ND ND SampT Batch Analysis D Result 57	Pate: 3/ PQL 1.0 1.0 Type: ME 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value 5050 10/2015 SPK value 50.00	SPK Ref Val 25.84 34.66 Tes SPK Ref Val SPK Ref Val SPK Ref Val SPK Ref Val 0	SeqNo: 7: %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 7: %REC tCode: EF RunNo: 24 SeqNo: 7: %REC 113	28506 LowLimit 75 75 PA 6010B: ⁻ 4731 28508 LowLimit 4731 28509 LowLimit 80	HighLimit 125 125 Fotal Metals Units: mg/L HighLimit Units: mg/L HighLimit 120	1.52 1.89 %RPD	20 20 RPDLimit	Qual
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Sodium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium	3/9/2015 MB-18050 PBW 3/9/2015 LCS-18050 LCSW	Analysis D Result 75 86 SampT Batch Analysis D ND ND ND ND ND SampT Batch Analysis D Result 57 56	Pate: 3/ PQL 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value 50.00 50.00 50.00 50.00	SPK Ref Val 25.84 34.66 Tes SPK Ref Val	SeqNo: 72 %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 72 %REC tCode: EF RunNo: 24 SeqNo: 72 %REC 113 113	28506 LowLimit 75 75 74 6010B: 7 4731 28508 LowLimit 4731 28509 LowLimit 80 80	HighLimit 125 125 Fotal Metals Units: mg/L HighLimit Units: mg/L HighLimit 120 120	1.52 1.89 %RPD	20 20 RPDLimit	Qual
Prep Date: Analyte Magnesium Potassium Sample ID Client ID: Prep Date: Analyte Calcium Magnesium Potassium Sodium Sample ID Client ID: Prep Date:	3/9/2015 MB-18050 PBW 3/9/2015 LCS-18050 LCSW	Analysis D Result 75 86 SampT Batch Analysis D ND ND ND ND ND SampT Batch Analysis D Result 57	Pate: 3/ PQL 1.0 1.0 Type: ME 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	10/2015 SPK value 50.00 50.00 3LK 050 10/2015 SPK value 5050 10/2015 SPK value 50.00	SPK Ref Val 25.84 34.66 Tes SPK Ref Val SPK Ref Val SPK Ref Val SPK Ref Val 0	SeqNo: 7: %REC 98.6 102 tCode: EF RunNo: 24 SeqNo: 7: %REC tCode: EF RunNo: 24 SeqNo: 7: %REC 113	28506 LowLimit 75 75 PA 6010B: ⁻ 4731 28508 LowLimit 4731 28509 LowLimit 80	HighLimit 125 125 Fotal Metals Units: mg/L HighLimit Units: mg/L HighLimit 120	1.52 1.89 %RPD	20 20 RPDLimit	Qual

Qualifiers:

Client:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

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#: 1502959

WO#:	1502959
	25-Mar-15

	jo Refining Company terly WDW-1, 2, &3 Inj Well				
Sample ID MB-R24992 Client ID: PBW	SampType: MBLK Batch ID: R24992	TestCode: CYANIDE, Re RunNo: 24992	eactive		
Prep Date:	Analysis Date: 3/5/2015	SeqNo: 736973	Units: mg/L		
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qu	ıal
Cyanide, Reactive	ND 1.00				
Sample ID LCS-R24992	SampType: LCS	TestCode: CYANIDE, Re	eactive		
Client ID: LCSW	Batch ID: R24992	RunNo: 24992			
Prep Date:	Analysis Date: 3/5/2015	SeqNo: 736974	Units: mg/L		
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qu	ıal
Cyanide, Reactive	0.480 0.5000	0 96.0 80	120		

- * Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

WO#:	1502959
	25-Mar-15

5	Refining Company ly WDW-1, 2, &3 Inj Well			
Sample ID MB-R24992	SampType: MBLK	TestCode: SULFIDE, Re	eactive	
Client ID: PBW	Batch ID: R24992	RunNo: 24992		
Prep Date:	Analysis Date: 3/3/2015	SeqNo: 736976	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Reactive Sulfide	ND 1.0			
Sample ID LCS-R24992	SampType: LCS	TestCode: SULFIDE, Re	eactive	
Client ID: LCSW	Batch ID: R24992	RunNo: 24992		
Prep Date:	Analysis Date: 3/3/2015	SeqNo: 736977	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Reactive Sulfide	0.20 0.2000	0 100 70	130	

- * Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - Reporting Detection Limit RL

WO#:	1502959
	25-Mar-15

	Navajo Refining Company Quarterly WDW-1, 2, &3 Inj Well	
Sample ID mb-1	SampType: MBLK TestCode: SI	M2320B: Alkalinity
Client ID: PBW	Batch ID: R24621 RunNo: 24	24621
Prep Date:	Analysis Date: 3/3/2015 SeqNo: 72	25674 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO	03) ND 20	
Sample ID Ics-1	SampType: LCS TestCode: SI	M2320B: Alkalinity
Client ID: LCSW	Batch ID: R24621 RunNo: 24	24621
Prep Date:	Analysis Date: 3/3/2015 SeqNo: 72	25675 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCO	O3) 79 20 80.00 0 99.2	90 110

- * Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

-		
Navajo Refining Con	npany	
Quarterly WDW-1, 2	2. &3 Ini Well	
C		
59-001ADUP SampTy	vpe: DUP Test	Code: Specific Gravity

Sample ID	1502959-001ADUP	SampType:	DUF	•	Tes	tCode:	Specific Gra	vity			
Client ID:	WDW-1,2,&3 Effluen	Batch ID:	R24	648	F	RunNo:	24648				
Prep Date:	A	nalysis Date:	3/5/	2015	S	eqNo:	726439	Units:			
Analyte	I	Result PC	ΩL	SPK value	SPK Ref Val	%RE0	C LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	/ C	.9999	0						0.220	20	

Client:

Project:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 24 of 25

WO#:	1502959
	25-Mar-15

	avajo Refining Company arterly WDW-1, 2, &3 Inj Well
Sample ID MB-17895	SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: PBW	Batch ID: 17895 RunNo: 24545
Prep Date: 2/25/201	Analysis Date: 2/27/2015 SeqNo: 722782 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	ND 20.0
Sample ID LCS-1789	SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: LCSW	Batch ID: 17895 RunNo: 24545
Prep Date: 2/25/201	Analysis Date: 2/27/2015 SeqNo: 722783 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1010 20.0 1000 0 101 80 120

- * Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - Reporting Detection Limit RL

Client Name: NAVAJO REFINING CO	Work Order Number	15029	59			ReptNo:	1
Received by/date:	02/24/15						
0	2/24/2015 B:00:00 AM			A			
Logged By: Ashley Gallegos	2/24/2015 9:49:07 AM			A			
Completed By: Ashley Gallegos	1.1.2			1			
Reviewed By:	02/24/15						
Chain of Custody			-	No		Not Present	
1. Custody seals infact on sample bottles?		Yes		No	ET.	Not Present	
2. Is Chain of Custody complete?					hard fr		
How was the sample delivered?		Cour	let				
Log In							
4. Was an altempt made to cool the samp	es?	Yes	V	No	£1	NA	
5. Were all samples received at a tempera	ture of >0° C to 6.0°C	Yes	~	Nó	E.	NA I	
o. Were an samples received at a tempera					_		
6. Sample(s) in proper container(s)?		Yes	\checkmark	No			
7. Sufficient sample volume for indicated to	est(s)?	Yes		No			
8. Are samples (except VOA and ONG) pro	operly preserved?	Yes	✓	No			
9. Was preservative added to bottles?		Yes	-	No	2	NA	
10, VOA vials have zero headspace?		Ves	-	No	V	No VOA Vials	
11. Were any sample containers received b	roken7	Yes	E	No	V		
						# of preserved bottles checked	-
12 Does paperwork match bottle labels?		Yes	*	No	0	for pH:	12 unless noted
(Note discrepancies on chain of custody 13. Are matrices correctly identified on Chai		Yes		No		Adjusted?	No
14. Is it clear what analyses were requested		Yes	res .	No			
15. Were all holding times able to be met?		Yes	V	No	E	Checked by	20
(If no, notify customer for authorization.)						0	
Special Handling (if applicable)							
16. Was client notified of all discrepancies v	with this order?	Yes		No		NA 🗹	
Person Nolified:	Date				-		
By Whom:	Via	eM	ail 📋	Phone 🗌	Fax	In Person	
Regarding:							
Client Instructions:					_		-
17 Additional remarks:							

		www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	(,s 	2EK b 136'3 010' 22,) 4 852(2,) 22,) 1'	40.6 40.6	Net Met Met Mit Mit Mit Mit Mit Mit Mit Mit Mit Mi	Hu, ca 1 bal 1 ca 1 bal 1 ca 1 bal 1 ca 1 ca 1 ca 1 ca 1 ca 1 ca 1 ca 1 ca	V Seff SW-84 Cation/anio So4, TDS, I Metals/SW-84 (see attache SVOCs/SW-8 (see			×	x	×	×			Remarks: Report these results separately from all other all other 5 CRA chain of Custody kits provided.	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.
	_		2, & 3 Inj Well						ON C		HEAL NO.	0Q -					0	0-		 Late Time 0.2 /スイバ5 Date Time	ries. This serves as not
d Time:	- Rush		-	.O. # 167796		lager:	Ţ		Auve	H J U	Preservative	Neat/H2SO4	HN03	HCL	Neat	Neat	Neat	Neat		 alliges	accredited laborato
Turn-Around Time:	□ Standar	Project Name:	Quarterly W	Project #. P.O. #		Project Manager:	Dan Crawford	Sampler.	On Ice.	Sample Temperature:	Container Type and #	е	-	ю	2	2	2	, -		Received by:	ontracted to other
Chain-of-Custody Record			59 Artesia,								Sample Request ID	WDW-1, 2, & 3 Effluent	Trip Blank	Temperature Blank		Relinquished by Elicolocth Salsberry Eugovolth Daloberry Relinquished by:	submitted to Hall Environmental may be subc				
-of-Cu	ining Co.		Mailing Address: P.O. Box 159 Artesia,		3311	email or Fax#: 575-746-5451					Matrix	0830 Liquid	DR30 Liquid	0830 Liquid	Sea Liquid	OBSO Liquid	DESD Liquid	CEBC Liquid			sary, samples s
Shain-	Client: Navajo Refining Co.		ddress: F	1-0159	Phone #: 575-748-3311	⁼ ax#: 575	ackage:	2	T		Time	0830	0830	0830	06-37	0000	0880 0	ð		Time:	If neces:
J	Client: N		Mailing A	NM 88211-0159	Phone #:	email or I	QA/QC Package			ר נכ נכ	Date	2/23/15	2/23/15	2/23/15	2/23/15	2/23/15	2/23/15	2/23/15		Date: 2/23/15 Date:	

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HOLLYFRONTIER The HollyFrontier Companies	Physical Property Solid	 P-856 sample point (third from east) P-857 sample point (fourth from east) 	r Arialysis and/or Method Requested Specific Gravity,HCO3, CO3, CI, SO4, TDS, DH cond, FI, Cation/anion bal. Br. Eh/40	CFR 136.3 VOCs/SW-846 Method 8260C (see attached list "VOCs")	SVOCs/SW-846 Method 8270D (see attached list 'SVOCs')	R,C,I/40 CFR part 261 Metals/SW-846 Mthd 6010, 7470 (see attached li <u>s</u> t 'Metals')	Ca, K, Mg, Na/40 CFR 136.3 TCLP Metals, only /40 CFR Part 261/ SW- 846 Method 1311		ight snow Storage Method Storage Method Ice Ide Ide Ice Ide Other Cother
Injection Well Quarterly Sample Details HOI Attachment	Sample Type Grab Time Weighted Composite	□ P-849 sample point (first from east) ☑ P-854 sample point (second from east)	HNO3 H2SO4 NaOH Na2S2O3 NaHSO4 Other						5 08:35 Tmp. 19.4, Humidity 100%, Wind Dir. NNE, Wind Speed 11.5 mph, Conditions light snow
Navajo Refining Compuny, LLK 501E. Main Artesia, NM 88210 (Tel) 575.748.3311 (Pax) 575.746.5451	LLC	Waste water effluent pumps to injection wells.	# of Containers (None) HCL HNO3		x x	2 X 2 X	× ×		2:23:201
Are a a a a a a a a a a a a a a a a a a a	Project Name WDW-1,2, & 3 Ortly Inj Well Samplers Name Elizabeth Salsberry Samplers Affiliation Navajo Refining Co. LLC Start Date and Time 2/23/2015 @ 08:25 End Date and Time 2/23/2015 @ 08:35	Outfall / Sample Location: Waste water	iner Size Material			.	6	8 9 10	Field Data (Weather, Observations, Etc): Date and Time: Field Temp. 95.6°F Field pH 5.86

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Classification	Analyte name ⁽¹⁾	Method	Units	RL
Inorganics	Mercury	SW-846 Method 7470		
Inorganics	Arsenic	SW-846 Method 6010		
Inorganics	Silver	SW-846 Method 6010		
Inorganics	Aluminum	SW-846 Method 6010		
Inorganics	Barium	SW-846 Method 6010		
Inorganics	Beryllium	SW-846 Method 6010		
Inorganics	Calcium	SW-846 Method 6010		
Inorganics	Cadmium	SW-846 Method 6010		
Inorganics	Cobalt	SW-846 Method 6010		
Inorganics	Chromium	SW-846 Method 6010		
Inorganics	Copper	SW-846 Method 6010		
Inorganics	Iron	SW-846 Method 6010		
Inorganics	Mercury	SW-846 Method 6010		
Inorganics	Potassium	SW-846 Method 6010		
Inorganics	Magnesium	SW-846 Method 6010		
Inorganics	Manganese	SW-846 Method 6010		
Inorganics	Sodium	SW-846 Method 6010		
Inorganics	Nickel	SW-846 Method 6010		
Inorganics	Lead	SW-846 Method 6010		
Inorganics	Antimony	SW-846 Method 6010		
Inorganics	Selenium	SW-846 Method 6010		
Inorganics	Thallium	SW-846 Method 6010		
Inorganics	Vanadium	SW-846 Method 6010		
Inorganics	Zinc	SW-846 Method 6010		

** dilute elements only if necessary (1) 23 TAL Metals

ARCADIS

Attachment 2

EP Background Soil Statistical Evaluation Memo



MEMO To-Karel Schnebele

Copies: Pam Krueger

Mark Lupo

Date: August 14, 2013

From:

ARCADIS Project No.: TX000864.0004

Subject[.] Statistical Determination of Background Concentrations in Soil, Navajo Refinery, Artesia, New Mexico.

Soil borings were advanced in four designated background soil areas surrounding the Evaporation Ponds near the Navajo Refinery in Artesia, New Mexico in order to determine the background concentrations of key constituents in soil. The data were statistically analyzed in order to calculate values representative of naturally occurring background concentrations. In this memo, the method and results of these calculations are presented.

Location of the Soil Borings

Four areas were designated as "background soil areas" in which soil borings were advanced for collecting background samples. The areas were selected to be representative of native soils similar to those encountered both in the Refinery and in the Evaporation Ponds. However, the four areas were also selected in locations that would not be expected to have impacts from refinery operations or other potential hydrocarbon impacts. Three borings were advanced in each of the areas, designated BG-01 to BG-12. Two samples were collected for analysis from each boring. The first sample was collected one foot below ground surface (bgs) in a soil identified in the boring logs as sandy silt. The second sample was collected within the first foot after encountering a soil identified as silty clay in the boring logs. Table 1 lists the borings, the depths of the samples, and the background areas from which they were obtained.

ARCADIS U.S., Inc. 100 East Campus View Blvd. Suite 200 Columbus Ohio 43235 Tel 614 985 9100 Fax 614 985 9170



List of Chemical Constituents

Statistical analysis was conducted for the following thirteen metallic constituents: arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc. Three ions were also selected for statistical analysis due to interest to the project team: chloride, fluoride, and sulfate. Of the metals for which data were available, only silver lacked a sufficient number of detections to allow parametric testing. Silver was detected only once out of 24 samples, in BG-05 at a depth of one foot bgs. Eleven of the metals were detected in 24 of 24 samples, as were the ions. Selenium had one non-detection, and mercury had three. The analytical data used in the statistical analysis are presented in Table 1.

Statistical Test Method

Representative background concentrations of the COCs were determined by constructing a statistical interval that would capture 95 percent (%) of the background values with 95% confidence. In statistics, this interval is called a Tolerance Interval, and its upper limit is called the Upper Tolerance Limit (UTL). Because of the application and the COCs, the interval was single-tailed. In this memorandum, all UTLs are "95/95 UTLs", that is, they are the upper limit of an interval designed to capture 95% of the background values with 95% confidence.

A UTL can be computed for a given COC from the mean of the background values (x) and the standard deviation (S) using the following parametric formula:

$\mathsf{UTL} = \mathsf{x} + \mathsf{S} \ \kappa$

The value of the parameter κ is chosen based upon the level of confidence, the coverage, and the number of points in the data set. The appropriate values of κ can be found in a table provided by the United States Environmental Protection Agency (USEPA) in its 2009 Unified Guidance document for groundwater statistics. (Table 17-3, USEPA, 2009). These values are also available in the statistics literature. In computing the UTLs in this memorandum, we used the table provided by the USEPA (USEPA, 2009).

There are requirements for the use of the above equation. The data must be independent, normally distributed, and free of severe outliers. The distribution of the data points can be tested using a normality test. The Shapiro-Wilk test was run at a 5% level of significance. The Shapiro-Wilk Test is a robust test and is recommended in Unified Guidance (USEPA, 2009). If the data set failed the normality test, a transformation was made and the normality test was repeated. The transformations were made in the following order: square root, cube root, and logarithmic (Box and Cox, 1964). In the event that the data could not be normalized, the parametric equation above could not be used and a non-parametric method for determining the UTL was used. Non-parametric methods are not discussed further in this memo, because their use was not necessary, as discussed below. In addition to testing for normality, the Dixon



test was applied to identify any statistical outliers that might be present. The Dixon test was run at a 5% level of significance. Only one outlier was identified (for cadmium) and its handling is discussed below where the cadmium results are presented.

Environmental data often include non-detected results. Statisticians refer to this condition as censorship. If the detection rate is 85% or better, non-detections were replaced by one half of the detection limit. If the detection rate had been less than 85% for any data set, procedures specified in Unified Guidance (USEPA, 2009) would have been applied. These measures were not needed, because none of the data sets for which UTLs were computed had detection rates less than 85%.

Because the data were collected from two distinct soil types, it was of interest to see if the background data points were of the same statistical population. Toward that end, the data collected from sandy silt and silty clay were compared using a parametric Student's t-test at 95% confidence. If the test identified a statistical difference between the two groups, separate UTLs were computed for each of the two soil types.

Laboratories indicate the concentration as "estimated" and place a "J-flag" if a COC is detected at a concentration higher than the Method Detection Limit (MDL), but lower than the Practical Quantitation Limit (PQL), sometimes called a "reporting limit". All values that were J-flagged were used in the computation of UTLs as if they were quantitative.

Results

The results of the UTL calculations are summarized in Table 2. Each of the sixteen COCs for which a UTL was computed is discussed in a separate section below. In these sections, distribution determinations and outlier tests are discussed. Statistical independence was assumed, since it appears that an effort was made to identify the background soil areas. It is also clear that no two data points came from the same location, but that the twelve borings were distinct.

Arsenic

Arsenic was detected in all of the 24 background samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 2.18 mg/kg. The average concentrations of arsenic in the two soil types were 2.11 mg/kg and 2.24 mg/kg for the sandy silt and the silty clay, respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 3.92 mg/kg. This means that 95% of soil samples can be expected to have a naturally occurring arsenic concentration of 3.92 mg/kg or less with 95% confidence. Thus 3.92 mg/kg can be adopted as the background concentration for arsenic in soil at this site.



Barium

Barium was detected in all of the 24 background samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 144 mg/kg. The average concentrations of barium in the two soil types were 158 mg/kg and 130 mg/kg for the sandy silt and the silty clay, respectively. The t-test indicated that barium was statistically elevated in the sandy silt. The parametric analysis of variance (ANOVA) did not indicate a difference in the populations, but its non-parametric counterpart, the Kruskal-Wallis test did. Therefore the barium data for sandy silt and silty clay were treated as separate statistical populations. Both data sets were normally distributed. No statistical outliers were identified in either group. The sandy silt data had a UTL of 252 mg/kg. The silty clay had a UTL of 227 mg/kg. Thus, a soil sample collected from sandy silt can be expected to have a naturally occurring barium concentration of 252 mg/kg or less. In like manner, a sample is collected from silty clay can be expected to have a naturally occurring barium concentration of 252 mg/kg or less.

Cadmium

All but one of the cadmium analyses resulted in a concentration that was below the reporting limit. Cadmium was detected in all 24 samples at concentrations above the method detection limit. Although the data is thus 96% composed of J-flagged data, the data have a discernable distribution. The full data set failed the Shapiro-Wilk test of normality. Successive transformations were undertaken using the method of Box and Cox (1964). The data were found to be lognormally distributed. One statistical outlier was identified, which was the result from BG-12 at one foot bgs. Usually, that data point would be set aside. It would be compelling to do so, because the other 23 data points would be normally distributed (with no other outliers). However, removing the outlier from the calculation would also remove the only point that was not J-flagged.

The decision to include outlier was based upon the following reasoning. First, there is no evidence to suggest that the measurement of the cadmium concentration at BG-12 was the result of an error on the part of field personnel or the laboratory. On the contrary, this concentration of 0.465 mg/kg is believable when compared to the other two samples collected in sandy silt in Background Soil Area 4. BG-11 had the second highest concentration of 0.242 mg/kg. BG-10 had 0.184 mg/kg, which was also greater than the arithmetic mean for the sandy silt. It is therefore more likely that the high concentration is an accurate measurement rather than a sampling or analytical error. The present view of the environmental statistics community is to retain data points rather than dismiss them unless there is evidence of some sort or error or distortion in the data point. The evidence points in the opposite direction. Second, the data set is lognormally distributed with the data point from BG-12 included. That a known distribution is exhibited supports the view that the data point belongs to the population. Third, the twelve data points of each of the sandy silt and silty clay subsets pass the Shapiro-Wilk test when lognormally transformed. Finally, as stated already, the data point in question is the only member of the data set that is not flagged as estimated. For all of these reasons, the outlier was retained.



Whenever a data set is not normally distributed, the arithmetic mean may not be the best estimate of central tendency. It is more accurate to compute the mean in transformed space and back-transform the result. In lognormally distributed data sets, such a measure is known as the geometric mean. For the complete cadmium data set, the geometric mean was 0.139 mg/kg. The geometric mean of the sandy silt was 0.153 mg/kg; the geometric mean of the silty clay was 0.126 mg/kg. The parametric t-test was performed on the log-transformed data and indicated that the data from the two soil types were a single population. The UTL was computed and back-transformed to be 0.339 mg/kg. This means that a soil sample could be expected to have a naturally occurring cadmium concentration of 0.339 mg/kg or less.

Chromium

Chromium was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 10.0 mg/kg. The average concentrations of chromium in the two soil types were nearly the same: 10.03 mg/kg and 9.97 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 18.8 mg/kg. This means that a soil sample could be expected to have a naturally occurring chromium concentration of 18.8 mg/kg or less.

Copper

Copper was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 6.62 mg/kg. The average concentrations of copper in the two soil types were nearly the same: 6.64 mg/kg and 6.61 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 12.4 mg/kg. This means that a soil sample could be expected to have a naturally occurring copper concentration of 12.4 mg/kg or less.

Iron

Iron was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 9,242 mg/kg. The average concentrations of iron in the two soil types were nearly the same: 9,335 mg/kg and 9,149 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 17,344 mg/kg. This means that a soil sample could be expected to have a naturally occurring iron concentration of 17,344 mg/kg or less.

Lead

Lead was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 6.66 mg/kg. The



average concentrations of lead in the two soil types were 6.94 mg/kg and 6.38 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 12.1 mg/kg. This means that a soil sample could be expected to have a naturally occurring lead concentration of 12.1 mg/kg or less.

Manganese

Manganese was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 305 mg/kg. The average concentrations of manganese in the two soil types were 309 mg/kg and 301 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 488 mg/kg. This means that a soil sample could be expected to have a naturally occurring manganese concentration of 488 mg/kg or less.

Mercury

The mercury data set contained 21 detections and 3 non-detections. The detection rate of 87.5% is greater than the 85% threshold, below which it would no longer be acceptable to replace the non-detections with one half of the method detection limit. With these substitutions, the data were found to be lognormally distributed. The geometric mean, the relevant measure of the mean of a lognormally distributed data set, was 0.00210 mg/kg. The geometric mean of the mercury concentration in sandy silt was 0.00195 mg/kg; the geometric mean in the silty clay was 0.00225 mg/kg. The parametric t-test was performed on the log-transformed data and indicated that the data from the two soil types were a single population. The UTL was computed and back-transformed to be 0.0302 mg/kg. This means that a soil sample could be expected to have a naturally occurring mercury concentration of 0.0302 mg/kg or less.

Nickel

Nickel was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 9.15 mg/kg. The average concentrations of nickel in the two soil types were nearly the same: 9.25 mg/kg and 9.05 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 16.2 mg/kg. This means that a soil sample could be expected to have a naturally occurring nickel concentration of 16.2 mg/kg or less.

Selenium

The selenium data set contained 23 detections out of 24 data points. The detection rate of 96% is great enough to justify replacing the non-detection with one half of the method detection limit. With this substitution, the data were statistically analyzed. The data set was found to be normally distributed and



free of outliers. The selenium data had an average value of 0.378 mg/kg. The average concentrations of selenium in the two soil types were 0.391 mg/kg and 0.365 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 0.682 mg/kg. This means that a soil sample could be expected to have a naturally occurring selenium concentration of 0.682 mg/kg or less.

Vanadium

Vanadium was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 15.6 mg/kg. The average concentrations of vanadium in the two soil types were 14.6 mg/kg and 16.6 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 28.3 mg/kg. This means that a soil sample could be expected to have a naturally occurring vanadium concentration of 28.3 mg/kg or less.

Zinc

Zinc was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 25.1 mg/kg. The average concentrations of zinc in the two soil types were 26.1 mg/kg and 24.1 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 46.6 mg/kg. This means that a soil sample could be expected to have a naturally occurring zinc concentration of 46.6 mg/kg or less.

Chloride

Chloride was detected in all 24 of the background soil samples. The data set was tested and found be to normally distributed and free of statistical outliers. The data had an average value of 1,952 mg/kg. The average concentrations of chloride in the two soil types were 1,704 mg/kg and 2,200 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 5,264 mg/kg. This means that a soil sample could be expected to have a naturally occurring chloride concentration of 5,264 mg/kg or less.

Fluoride

Fluoride was detected in all of the 24 background soil samples. The data were found to be cube-root normally distributed. The relevant measure of the mean of a cube-root normal data set is to compute the mean of the cube roots of the data points and cube the result. This value was 3.56 mg/kg. The cube-root corrected mean of the fluoride concentration in sandy silt was 2.80 mg/kg; for the silty clay it was 4.45 mg/kg. The parametric t-test was performed on the cube-root transformed data and indicated that the



fluoride data from the two soil types were a single population. The UTL was computed and backtransformed to be 17.9 mg/kg. This means that a soil sample could be expected to have a naturally occurring fluoride concentration of 17.9 mg/kg or less.

Sulfate

Sulfate data was detected in all of the 24 background soil samples. The data were found to be cube-root normally distributed. The cube-root corrected mean was 1,464 mg/kg. The cube-root corrected mean of the sulfate concentration in sandy silt was 553 mg/kg; for the silty clay it was 3,113 mg/kg. The parametric t-test was performed on the cube-root transformed data and indicated that sulfate was statistically elevated in the silty clay compared to the sandy silt. The parametric analysis of variance (ANOVA) and its non-parametric counterpart, the Kruskal-Wallis test concurred. Therefore the sulfate data for sandy silt and silty clay were treated as separate statistical populations. Both data sets were cube-root normally distributed. No statistical outliers were identified in either group. The sandy silt data had a UTL of 9,336 mg/kg. The silty clay had a UTL of 21,620 mg/kg. Thus, a soil sample collected from sandy silt could be expected to have a naturally occurring sulfate concentration of 9,336 mg/kg or less. In like manner, a sample collected from silty clay could be expected to have a naturally occurring sulfate concentration of 21,260 mg/kg or less.

Discussion

It has been stated above that the tolerance intervals from which the UTLs were computed were designed with 95% coverage. By definition, 5% of all background samples will have concentrations that exceed the UTLs. From a practical standpoint, this means that if a soil sample has a concentration that is less than or equal to the UTL, it can be considered to be background, but the converse is not true. If a sample exceeds the UTL it might indicate contamination, but this is not necessarily the case. In order to categorize such a sample as "above background", another line of evidence is necessary. It may be convenient to simply judge samples as "background" and "above background" on the basis of these UTLs, but in practice, one would be wrong 5% of the time. Stated another way, a suite of samples that were truly from the background and were compared to the UTLs presented in Table 2 would exceed the UTLs and be falsely identified as "above background" 5% of the time. In summary, a thorough interpretation of the field data must be made in view of the definition of the coverage of the UTL. To simply classify all concentrations that exceed the UTL as contaminated is a conservative assumption.

Conclusion

The background soil data were statistically analyzed for sixteen constituents, including thirteen metals and three ions. After testing to be sure the concentrations of the constituent collected from two soil types were a single population, UTLs were computed for the combined data set or for the subsets for the soil types, as appropriate. Procedures were followed to correctly identify the distribution of the data and to account



for outliers. The UTLs are presented in the text of this memo and in a summary table (Table 2). The UTLs were computed for 95% coverage and with 95% confidence. For a given constituent, 95% of background soil samples can be expected to have a concentration at or less than the UTL presented in this memo with 95% confidence. If a soil sample collected in the Refinery area or near the Evaporation Ponds had a concentration less than or equal to its UTL, that concentration of that constituent could be considered to be naturally occurring.

References

Box G.E.P. and D.R. Cox. 1964. An analysis of transformations (with discussion). *Journal of Royal Statistical Society Series B*, 26, 211-252.

United States Environmental Protection Agency. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, U.S. Environmental Protection Agency. EPA 530-R-09-007. March, 2009.

ARCADIS

Table 1. Data from Background Soil BoringsNavajo Refining Company, Artesia Refinery, New Mexico

		Depth	Arsenic	Barium	Cadmium	Chror	nium Coppe	r Iron	Lead	Manganese	Mercury	
Boring	Area	feet	mg/kg	mg/kg	mg/kg	mg/			mg/kg	mg/kg	mg/kg	
BG-01	1	1	1.07	97.2	0.0964	J 3.7	0 2.25	3,740	3.00	191	0.00048	U
BG-01	1	5	2.12	144	0.0955	J 8.6	6.98	8,940	6.57	348	0.00157	J
BG-02	1	1	1.12	129	0.129	J 5.5	6 3.21	5,210	3.99	204	0.00121	J
BG-02	1	5	2.75	176	0.139	J 13	.8 9.59	12,700	8.77	371	0.00448	
BG-03	1	1	2.28	186	0.131	J 10	.9 6.44	10,400	6.62	344	0.00155	J
BG-03	1	6	2.88	162	0.198	J 16	.9 10.1	15,300	9.54	431	0.00274	J
BG-04	2	1	2.62	153	0.187	J 14	.8 9.48	13,700	9.13	405	0.00580	
BG-04	2	3	1.61	85.6	0.123	J 8.0	4.86	6,370	4.00	178	0.00184	J
BG-05	2	1	1.99	150	0.163	J 8.8	2 7.34	7,600	7.66	268	0.0300	
BG-05	2	4	3.56	58.6	0.145	J 9.5	8 7.11	8,070	5.43	241	0.00199	J
BG-06	2	1	2.54	178	0.144	J 10	6 7.49	9,670	7.80	348	0.00574	
BG-06	2	4	2.36	88.6	0.140	J 8.9	6 5.81	7,130	5.51	266	0.00181	J
BG-07	3	1	0.93	103	0.0719	J 3.8	0 2.27	3,810	2.93	181	0.00048	U
BG-07	3	5	1.42	139	0.0884	J 6.6	67 4.42	6,550	4.57	244	0.00157	J
BG-08	3	1	1.92	167	0.132	J 8.9	9 6.31	8,000	5.83	299	0.00050	U
BG-08	3	4	1.88	145	0.104	J 8.4	7 5.71	8,230	5.98	261	0.00141	J
BG-09	3	1	1.94	214	0.120	J 9.4	5 5.51	9,090	6.11	328	0.00076	J
BG-09	3	4	1.24	129	0.0906	J 6.4	7 3.39	5,910	4.05	232	0.00192	J
BG-10	4	1	2.34	176	0.184	J 12	.2 8.33	11,500	8.30	307	0.00314	J
BG-10	4	4	2.62	158	0.140	J 12	.5 8.45	12,200	8.56	358	0.00545	
BG-11	4	1	2.58	166	0.242	J 11	4 8.89	11,000	9.50	384	0.00662	
BG-11	4	5	2.59	127	0.184	J 10		9,580	8.09	386	0.00537	
BG-12	4	1	4.04	179	0.465	20		18,300	12.4	445	0.00707	
BG-12	4	5	1.80	152		J 9.2		8,810	5.53	301	0.00108	J

Notes:

Area: The designated background soil area in which the boring was advanced.

mg/kg: Milligrams per kilogram.

J: Estimated value; the constituent was detected at a concentration between the method detection limit and the reporting limit.

U: Non-detection; the constituent was not detected above the method detection limit, the value shown on this table. One half the method detection limit was the value used in the statistical calculations.

ARCADIS

Table 1. Data from Background Soil BoringsNavajo Refining Company, Artesia Refinery, New Mexico

		Depth	Nickel	Selenium		Silver	V	/anadium	Zinc	Chloride	Fluoride	Sulfate
Boring	Area	feet	mg/kg	mg/kg	r	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BG-01	1	1	3.60	0.351 .	J	0.483	U	6.57	10.0	47.6	0.816 J	164
BG-01	1	5	9.51	0.394	J	0.457	U	13.6	22.0	1120	4.33	972
BG-02	1	1	5.02	0.170 l	J	0.468	U	8.72	15.0	14.7	0.388 J	87.8
BG-02	1	5	12.7	0.485		0.440	U	20.4	33.3	3550	3.43	2560
BG-03	1	1	10.5	0.354	J	0.456	U	17.0	26.7	5760	4.10	4390
BG-03	1	6	13.5	0.433	J	0.467	U	23.9	38.9	1720	1.40	1910
BG-04	2	1	12.8	0.576		0.433	U	19.8	36.9	2480	1.75	4890
BG-04	2	3	5.83	0.192	J	0.425	U	14.2	16.1	860	11.0	7830
BG-05	2	1	8.22	0.399	J	0.262	J	12.1	31.9	45.1	2.56	18.2
BG-05	2	4	7.95	0.394	J	0.488	U	27.6	23.8	1950	20.7	13500
BG-06	2	1	10.8	0.451		0.419	U	15.1	28.1	993	2.21	1080
BG-06	2	4	7.64	0.316	J	0.456	U	16.7	20.8	865	12.1	10600
BG-07	3	1	3.64	0.168	J	0.431	U	6.68	9.94	607	3.34	56.5
BG-07	3	5	6.82	0.270	J	0.472	U	10.9	17.1	3260	3.04	2960
BG-08	3	1	8.46	0.467	J	0.468	U	13.2	21.7	4150	11.1	1130
BG-08	3	4	8.51	0.381	J	0.438	U	13.2	21.3	3810	3.78	4260
BG-09	3	1	9.91	0.287	J	0.443	U	14.9	24.0	1180	6.6	834
BG-09	3	4	5.85	0.222	J	0.453	U	10.2	15.0	2080	3.38	960
BG-10	4	1	11.3	0.394	J	0.425	U	17.9	29.5	2530	2.14	198
BG-10	4	4	11.5	0.468	J	0.484	U	19.0	30.3	2280	3.16	1520
BG-11	4	1	11.6	0.509		0.462	U	16.3	30.8	955	5.03	364
BG-11	4	5	10.3	0.495		0.425	U	14.3	28.3	2960	1.01	1080
BG-12	4	1	15.2	0.654		0.438	U	26.9	49.0	1680	1.64	90.4
BG-12	4	5	8.48	0.330	J	0.388	U	14.6	22.5	1950	1.87	1480

Notes:

Area: The designated background soil area in which the boring was advanced.

mg/kg: Milligrams per kilogram.

J: Estimated value; the constituent was detected at a concentration between the method detection limit and the reporting limit.

U: Non-detection; the constituent was not detected above the method detection limit, the value shown on this table. One half the method detection limit was the value used in the statistical calculations.

ARCADIS

 Table 2. Background Concentrations of Key Constituents in Soil

 Navajo Refining Company, Artesia Refinery, New Mexico

		UTL	Mean	
Constituent	Lithology	mg/kg	mg/kg	Distribution
Arsenic	All	3.92	2.18	Normal
Barium	Sandy silt	252	158	Normal
Barium	Silty clay	227	130	Normal
Cadmium	All	0.339	0.139	Lognormal
Chromium	All	18.8	10.0	Normal
Copper	All	12.4	6.62	Normal
Iron	All	17,344	9,242	Normal
Lead	All	12.1	6.66	Normal
Manganese	All	488	305	Normal
Mercury	All	0.0302	0.00210	Lognormal
Nickel	All	16.2	9.15	Normal
Selenium	All	0.682	0.378	Normal
Vanadium	All	28.3	15.6	Normal
Zinc	All	46.6	25.1	Normal
Chloride	All	5,264	1,952	Normal
Fluoride	All	17.9	3.56	Cube root
Sulfate	Sandy silt	9,336	533	Cube root
Sulfate	Silty clay	21,620	3,113	Cube root

Notes:

UTL: Upper tolerance limit, with 95% coverage and 95% confidence.

mg/kg: Milligrams per kilogram.

Mean: Not necessarily the arithmetic mean, but the mean computed according to the distribution indicated on this table and back-transformed. See text.



SUSANA MARTINEZ Governor JOHN A. SANCHEZ Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.env.nm.gov



RYAN FLYNN Cabinet Secretary BUTCH TONGATE Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C. P.O. Box 159 Artesia, New Mexico 88211-0159

RE: DENIAL "NO LONGER CONTAINED-IN" DETERMINATION FOR CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY EPA ID# NMD048918817 HWB-NRC-MISC

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Characterization of Soil Excavated from Tank 815 Release*, dated July 23, 2015. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

S. M. Denton August 4, 2015 Page 2 of 2

The excavated soil meets New Mexico's residential soil screening levels (SSLs) for all analytes with the exception of benzo(a)anthracene and benzo(a)pyrene. However, benzo(a)anthracene and benzo(a)pyrene are below the industrial SSLs. Although the excavated soil is not a characteristically hazardous waste per 40 CFR Part 261 Subpart C, it is a K-Listed waste because chrysene and pyrene exceed the hazardous constituent standards as defined in Part 268.2(i) of the Land Disposal Restriction (LDR) Treatment Standards listed in 40 CFR Part 268.48 regulatory limits.

NMED has reviewed the Permittee's request and has determined that the excavated soil is a hazardous waste and does not meet applicable LDR standards. NMED hereby denies the Permittee's request for a "no longer contained-in" determination and must manage the excavated soil as hazardous waste and dispose of the excavated soil at an appropriate facility.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

UL Sa

John E. Kieling Chief Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC



SUSANA MARTINEZ Governor JOHN A. SANCHEZ Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.env.nm.gov



RYAN FLYNN Cabinet Secretary BUTCH TONGATE Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton Environmental Manager Navajo Refining Company, L.L.C. P.O. Box 159 Artesia, New Mexico 88211-0159

RE: DENIAL "NO LONGER CONTAINED-IN" DETERMINATION FOR CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY EPA ID# NMD048918817 HWB-NRC-MISC

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Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

S. M. Denton August 4, 2015 Page 2 of 2

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If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

UL Sa

John E. Kieling Chief Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Tuesday, April 21, 2015 4:22 PM
То:	Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc:	Denton, Scott; Schultz, Michele; Strange, Aaron; Orosco, Richard
Subject:	Initial C-141 report - Diesel spill at T-815
Attachments:	2015-04-16 Initial C-141 Diesel spill at T-815.pdf

Carl and Leona,

Please see the attached C-141 form regarding the diesel spill at T-815 on 4/16/15. A Final C-141 form will be prepared once all field activities are complete.

Please contact me for any questions.

Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Sum 10, 1011 07505								
Release Notification and Corrective Action								
	OPERATOR	🛛 Initial Report	Final Report					
Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs							
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382							
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refin	ery						
Surface Owner: Navajo Refining Company, Mineral Ov	wner N/A	API No. N/A						

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County			

Latitude_Longitude_

NATURE OF RELEASE

Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls			
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence:	Date and Hour of Discovery: 04/16/15			
	04/16/15, Unknown time	6:30 am			
Was Immediate Notice Given?	If YES, To Whom?				
🛛 Yes 🗌 No 🗌 Not Required		inta Fe– Left message to Carl Chavez			
		- Left message to Leona Tsinnajinnie			
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 -				
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	itercourse.			
Yes 🛛 No	N/A				
If a Watercourse was Impacted, Describe Fully.*					
N/A					
Describe Cause of Problem and Remedial Action Taken.*					
The water collection sump from T-815 overflowed during routine dewate	ering of the tank. The water draw valve	e was immediately closed upon discovery			
and a vacuum truck was sent to recover any free liquids. The recovered l	liquids were returned to the crude proc	cess. The cause of the incident is under			
investigation.					
Describe Area Affected and Cleanup Action Taken.*					
Pooled liquids removed by vacuum truck and absorbent pads were used t	remove remaining hydrocarbons. Removal of the impacted soil from the spill				
will be collected in roll-off bins and characterized for disposal. Any add		ented in a Final C-141 report including			
analytical reports, map markups, photos, and waste characterization and	disposal records.				
I hereby certify that the information given above is true and complete to	the best of my knowledge and underst	and that numerant to NMOCD sular and			
regulations all operators are required to report and/or file certain release r					
public health or the environment. The acceptance of a C-141 report by the					
should their operations have failed to adequately investigate and remedia					
or the environment. In addition, NMOCD acceptance of a C-141 report of					
federal, state, or local laws and/or regulations.					
ΛΛΛ	OIL CONSER	VATION DIVISION			
		VIIION DIVIDION			
Signature:					
	Approved by Environmental Speciali	ist:			
Printed Name: Robert Combs					
Title: Environmental Specialist	Approval Date:	Expiration Date:			
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached			
Date: 4/21/15 Phone: 575-746-5382					

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From:	Chavez, Carl J, EMNRD
Sent:	Tuesday, April 21, 2015 9:36 AM
То:	'Combs, Robert'
Cc:	Tsinnajinnie, Leona, NMENV; Griswold, Jim, EMNRD
Subject:	RE: Initial C-141 report - Effluent Pipeline Leak 2015-04-12

Robert:

Received. OCD wants to make sure this properly cleaned up.

This is high Chloride and Sulfate containing fluids with other parameters of concern. Please note the depth to GW and make sure in your CA that the release is properly investigated (i.e., characterization 500 mg/kg Chloride to delineate horiz./vertical extent of release) and OCD expects to receive a remediation plan for final CA.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 O: (505) 476-3490 E-mail: <u>CarlJ.Chavez@State.NM.US</u> Web: <u>http://www.emnrd.state.nm.us/ocd/</u> **"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?"** To see how, please go to: "Pollution Prevention & Waste Minimization" at http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental



From: Combs, Robert [mailto:Robert.Combs@HollyFrontier.com] Sent: Friday, April 17, 2015 2:22 PM To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV Cc: Denton, Scott; Schultz, Michele; Strange, Aaron Subject: Initial C-141 report - Effluent Pipeline Leak 2015-04-12

Carl and Leona,

Please see the attached C-141 form regarding the effluent pipeline leak on 4/12/15. A Final C-141 form will be prepared once all field activities are complete.

Please contact me for any questions.

Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Ea NIM 97505

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

						inta re	e, nv $o/$	005			
			Rele	ease	e Notific	catio	n and Co	orrective A	ction	1	
							OPERA	TOR		🛛 Initi	al Report 🔲 Final Report
Name of Co	ompany: N	avajo Refini	ing Comp	any,	L.L.C.		Contact: M	icki Schultz			
Address: 50	1 E. Main	St., Artesia,	NM 882	10				No.: 575-746-52	281		
		o Refining C			C.			e: Petroleum R			
Surface Ow L.L.C.	ner: Navaj	io Refining (Company	,	Mineral C)wner 1	N/A			API No). N/A
LOCATION OF RELEASE											
Unit Letter	Section	Township	Range	Feet	t from the	North	/South Line	Feet from the	East/	West Line	County
			Lat	titudo	e_32°51'0. NAT		Longitud	le_104°20'20.0	3"W		E]
Type of Rele	ase: Non-ha	zardous treate	ed wastew	ater e				of Release: > 25 bbls Volume Recovered: 75 bbls			Recovered: 75 bbls
		l hole in pipel				ast of	Date and H	Volume of Kelease.25 bbisVolume Recovered.75 bbisDate and Hour of Occurrence:04/12/15, Unknown timeDate and Hour of Discovery:04/12			Hour of Discovery: 04/12/15
Was Immediate Notice Given?					If YES, To Whom?			message to Carl Chavez nessage, return call by Randy			
By Whom?	Ray Smalts				<u>.,</u>			esponse Center –			1113386
By Whom? 1	Ray Smalts							Hour 04/12/15 ~1			

By Whom? Ray Smalts

Was a Watercourse Reached? □ Yes 🖾 No

If a Watercourse was Impacted, Describe Fully,* N/A

Describe Cause of Problem and Remedial Action Taken.*

Pipeline leak was discovered during daily visual monitoring of the pipeline route. Wastewater effluent discharge pumps located at the refinery were shut down and a vacuum truck was dispatched to the scene to remove the water which had accumulated with rain water in a low-lying depression in the pipeline path across a field. The vacuumed water was returned to the refinery wastewater treatment unit.

None

If YES, Volume Impacting the Watercourse.

Describe Area Affected and Cleanup Action Taken.*

Pooled water was removed by vacuum truck and the pipeline was repaired. Any additional corrective actions will be presented in a Final C-141 report including analytical reports, map markups, photos, and any waste disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

NA	<u>OIL CON</u>	NSERVATION DIVISION				
Signature: 10/WR						
Printed Name: Robert Combs	Approved by Environmental	Approved by Environmental Specialist:				
Title: Environmental Specialist	Approval Date:	Expiration Date:				
E-mail Address:	Conditions of Approval:	Attached				
Date: Phone:						

Attach Additional Sheets It Necessary

Chavez, Carl J, EMNRD

From:	Krueger, Pamela <pam.krueger@arcadis-us.com></pam.krueger@arcadis-us.com>
Sent:	Friday, December 12, 2014 4:24 PM
То:	Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD
Cc:	Robert Combs; Turner, Maisha
Subject:	Navajo Refinery - status report for Southwest Tank Farm release
Attachments:	Figure1-Release Area.pdf; Figure2-InitialScreening.pdf; Figure3-SoilSamples.pdf; Table
	1.pdf; Table 2.pdf

Leona and Carl - This email provides a status report for the release response within the Southwest Tank Farm at the Navajo Refinery in Artesia, NM. Please contact either me or Robert if you have questions.

Southwest Tank Farm Diesel Pipeline Leak Status Report

Identification and Notification

On July 15, 2014, initial notification was provided to OCD and NMED of a diesel release within the containment berms of the Southwest Tank Farm (Figure 1). Rainwater was present within the containment areas due to recent storms and the morning inspections identified diesel on top of the rainwater. The source of the release was determined to be a diesel suction line that penetrates the berm between Tanks 434 and Tanks 417, 418, and 419. The liquid was suctioned up via vacuum trucks and returned to the process at the crude tank. Approximately 700 barrels of diesel and rainwater was removed from the containment areas. Absorbent pads and socks were applied to the remaining areas where diesel could not be removed via vacuum truck.

Response Actions

The berm was removed on July 16, 2014 to locate the source of the leak in the piping. It was determined that multiple small holes were present on the underside of the diesel pipeline.

On July 17, 2014, a hand auger was used to evaluate the depth of impacted soil within the containment areas. A photoionization detector (PID) was used to assist in evaluating the soil impacts. Figure 2 shows the hand auger locations, depths of the hand auger borings, and the PID readings for each location.

Excavation of the surficial soils (3 to 6 inches) was initiated on July 17, 2014 from the area surrounding Tanks 434, 111, 112, and 113. Excavated soils were placed on protective sheeting, then transferred to rolloff bins for characterization prior to disposal. No excavation of soil was performed in the containment around Tanks 417, 418, and 419 due to the presence of active aboveground piping on all sides of this containment area, preventing access.

An initial grab sample was collected from the excavated soil on July 18, 2014. This initial grab sample was analyzed for total petroleum hydrocarbons (TPH) diesel range organics (DRO) and motor oil range organics (ORO), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver). Table 1 provides a summary of the analytical results, which reflect typical diesel constituents.

On July 31, 2014, a representative composite sample of the excavated soil was collected and submitted for waste characterization sampling. The composite sample was analyzed using the toxicity characteristic leaching procedure (TCLP) for VOCs, SVOCs, and RCRA 8 metals. No detectable concentrations of these compounds were reported. Based on the analytical results, the impacted soil was characterized as non-hazardous waste and disposed of off-site.

The backfilling of the excavated area was completed on December 2, 2014 in order to allow access for continued refurbishing of Tank 434. Clean material was obtained and placed within the excavation.

In-Situ Treatment of Soil

A microbial agent (MicroBlaze[™]) was applied to the soil in both containment areas on July 18, 2014 in order to treat the soil impacts remaining in place. The material was applied using a mixture of approximately 6 percent (%) of MicroBlaze[™] in water. The mixture was sprayed in a layer approximately ¼ to ½ inch in thickness. On July 19, 2014, a rainstorm occurred that resulted in standing water within the containment area. Throughout the following weeks, water was applied to maintain the moisture within the area to promote microbial activity and biodegradation of the diesel impacts in the soil.

On August 13, 2014, soil samples were collected from 10 locations within the Southwest Tank Farm, as shown on Figure 4, to evaluate the current conditions. Samples were collected in the 0-6" interval below the ground surface and were analyzed for TPH DRO and TPH ORO. Table 2 provides a summary of the analytical results.

Periodic application of microbial agents has continued in order to promote degradation of the TPH remaining in the surficial soils, specifically within the containment area around Tanks 417, 418, and 419. As mentioned above, excavation cannot be performed within this area.

On October 16, 2014, soil samples were collected from 7 of the 10 previous locations and analyzed for TPH DRO and TPH ORO. On October 31, 2014, soil samples were collected from the remaining 3 of the 10 previous locations and analyzed for TPH DRO. Table 2 provides a summary of the analytical results. As can be seen in Table 2, the concentration of TPH DRO decreased at some locations but increased at other locations. The changes in concentration are assumed to be attributable to repeated rainfall events which have resulted in stormwater ponding for short periods of time within the containment areas, allowing for some movement of the residual diesel within the containment area.

Planned Work

Treatment of the soil within the containment area surrounding Tanks 417, 418, and 419 using microbial agents is planned to continue. Confirmation soil samples will be collected in January 2015 to evaluate the concentrations of TPH DRO remaining in this area.

The concentrations of TPH DRO present in the shallow soil beneath the backfilled excavation will be documented in the refinery's soil management plan.

Final Report

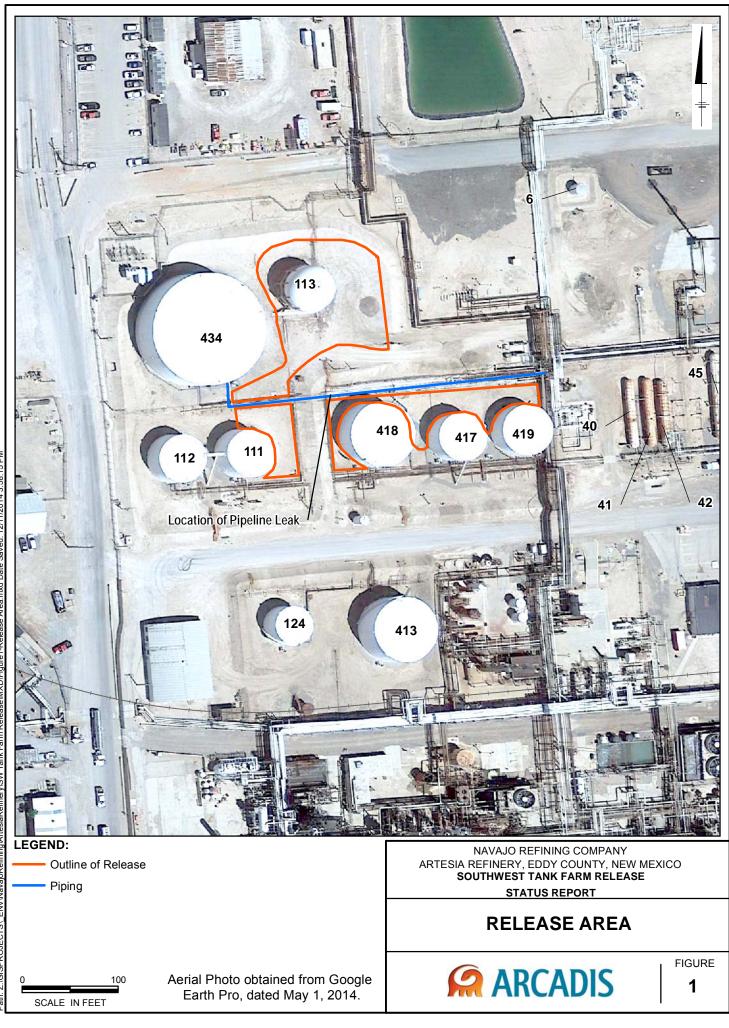
Supporting analytical reports, photos, further documentation, and details will be included in the Final Report/Final C-141.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77043 T: 713.953.4816 | M: 713.249.8548 | F: 713-977-4620 Connect with us! <u>www.arcadis-us.com | LinkedIn | Twitter | Facebook</u>

ARCADIS, Imagine the result

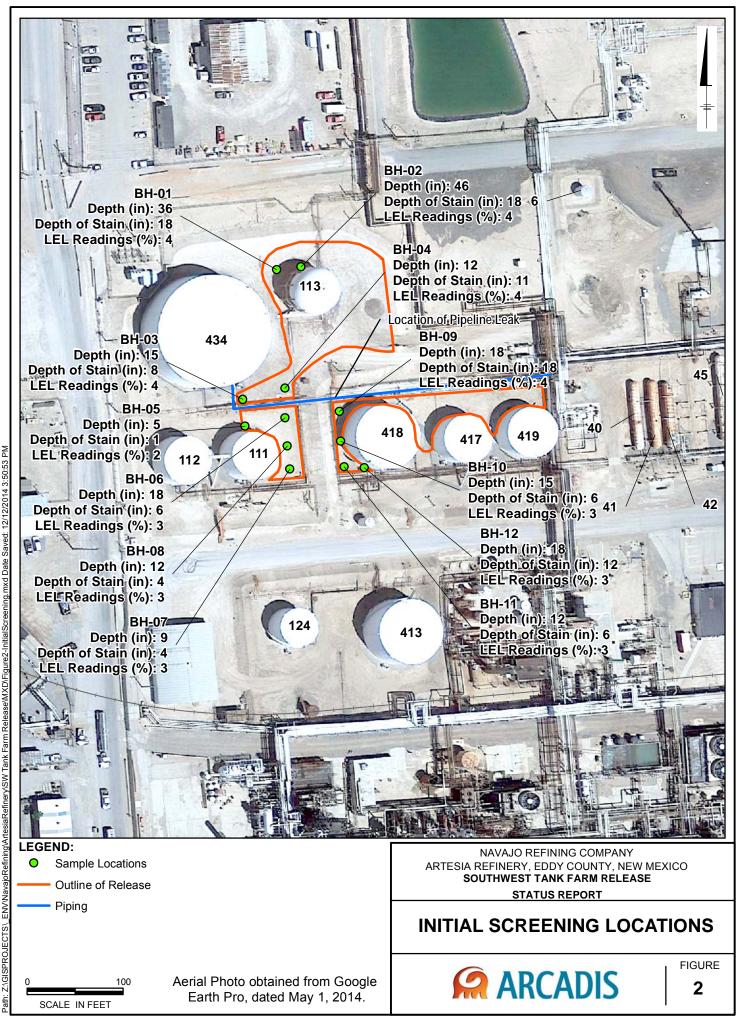
Please consider the environment before printing this email.

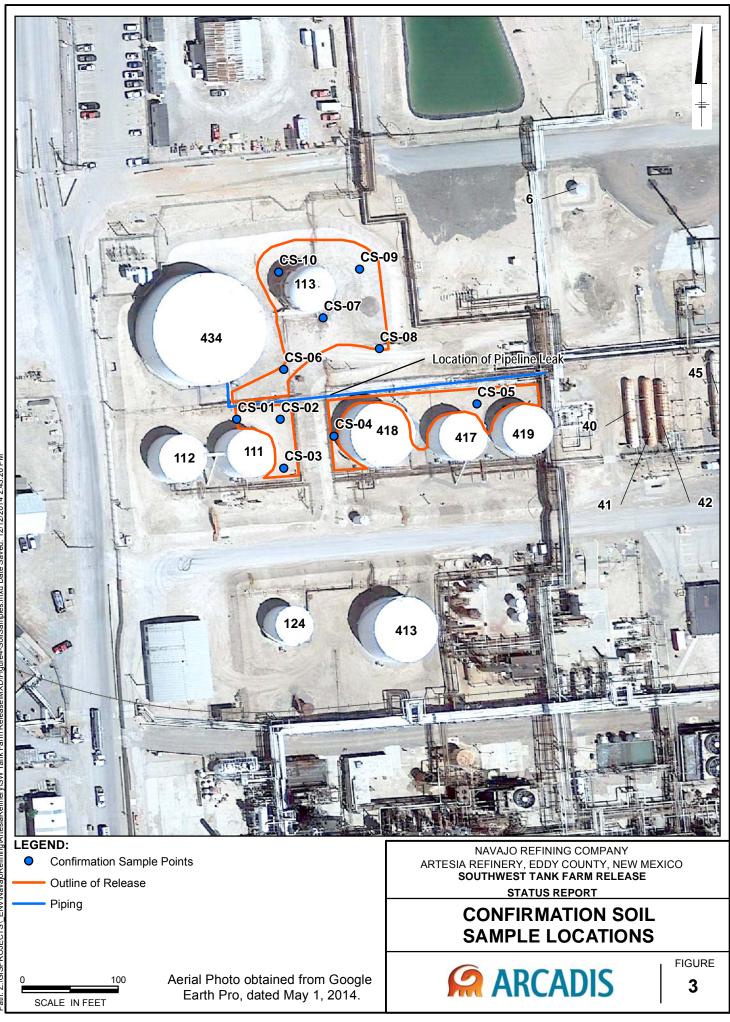


SPROJECTS_ENVINavajoRefiningArtesiaRefinery/SW Tank Farm Release\MXD/Figure1-Release Area.mxd Date Saved: 12/11/2014 3:58:15 PM CITY: (KNOXVILLE) DIV/GROUP:(ENV) DB: PROJECT: Dath: 7:/GISDB0/IECTS/ ENVINCINED AFFICIAL ECT 2/GI

PM: TM:

LD: PIC:





CITY: (KNOXVILLE) DIV/GROUP:(ENV) DB: LD: PIC: PM: TM: PROJECT:

Table 1 - Initial Grab Sample Results for Waste Characterization

Southwest Tank Farm Diesel Release - July 2014 Navajo Refinery, Artesia, New Mexico

	Soil Grab #1	Soil Composite
	7/18/2014	7/31/2014
Analyte	Result	Result
Total Petroleum Hydrocarbons (mg/kg)	
Diesel Range Organics	130,000	
Motor Oil Range Organics	<50,000	
Total Volatile Organic Compound	ds (mg/kg)	
1,1-Dichloroethene	< 0.39	
1,2-Dichloroethane	<0.79	
1,4-Dichlorobenzene	<1.1	
2-Butanone	<2.2	
Benzene	6.7	
Carbon tetrachloride	<0.67	
Chlorobenzene	<0.53	
Chloroform	<1.7	
Tetrachloroethene	<0.59	
Trichloroethene	<0.67	
Vinyl Chloride	<0.40	
Total Semivolatile Organic Com	ounds (ma/ka)	
2,4,5-Trichlorophenol	<4.4	
2,4,6-Trichlorophenol	<5.4	
2,4-Dinitrotoluene	<7.3	
Cresols, Total	<6.6	
Hexachlorobenzene	<5.4	
Hexachlorobutadiene	<4.7	
Hexachloroethane	<6.9	
Nitrobenzene	<5.5	
Pentachlorophenol	<8.0	
Pyridine	<5.5	
Total Metals (mg/kg)		•
Arsenic	<0.018	
Barium	0.83	
Cadmium	< 0.0005	
Chromium	<0.0015	
Lead	<0.0034	
Mercury	<0.00075	
Selenium	<0.027	
Silver	<0.001	
TCLP Volatile Organic Compoun		
1,1-Dichloroethene	/	<0.30
1,2-Dichloroethane		<0.50
1,4-Dichlorobenzene	1	<7.5
2-Butanone		<10
Benzene		<0.30
Carbon tetrachloride		< 0.50
Chlorobenzene	1	< 0.30
Chloroform	1	<6.0
Hexachlorobutadiene		<0.50
Tetrachloroethene	1	<0.70
Trichloroethene	1	< 0.30
Vinyl Chloride	1	<0.20
	1	\$0.20

	Soil Grab #1	Soil Composite
	7/18/2014	7/31/2014
Analyte	Result	Result
TCLP Semivolatile Organic Comp	oounds (mg/L)	
2-Methylphenol		<200
3+4-Methylphenol		<200
2,4,5-Trichlorophenol		<400
2,4,6-Trichlorophenol		<2.0
2,4-Dinitrotoluene		<0.13
Cresols, Total		<200
Hexachlorobenzene		<0.13
Hexachlorobutadiene		<0.50
Hexachloroethane		<3.0
Nitrobenzene		<2.0
Pentachlorophenol		<100
Phenol		<200
Pyridine		<5.0
TCLP Metals (mg/L)		
Arsenic		<5.0
Barium		<100
Cadmium		<1.0
Chromium		<5.0
Lead		<5.0
Mercury		<0.020
Selenium		<1.0
Silver		<5.0

Notes and Abbreviations:

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

TCLP = Toxicity Characteristic Leaching Procedure

Table 2 - Soil Confirmation Sample Results

		DRO	ORO
Location	Date	(mg/kg)	(mg/kg)
CS-1	8/13/2014	43,000	<4,900
CS-1	10/16/2014	36,000	<5,000
CS-2	8/13/2014	51,000	<5,000
CS-2	10/16/2014	79,000	<50,000
CS-3	8/13/2014	41,000	<5,000
CS-3	10/16/2014	83,000	<5,000
CS-4	8/13/2014	16,000	<5,000
CS-4	10/31/2014	39,000	NA
CS-5	8/13/2014	31,000	<5,000
CS-5	10/31/2014	26,000	NA
CS-6	8/13/2014	80,000	<5,000
CS-6	10/16/2014	69,000	<5,000
CS-7	8/13/2014	25,000	<5,000
CS-7	10/16/2014	36,000	<5,000
CS-8	8/13/2014	48,000	<5,000
CS-8	10/16/2014	39,000	<5,000
CS-9	8/13/2014	33,000	<5,000
CS-9	10/16/2014	11,000	<5,000
CS-10	8/13/2014	5,300	<490
CS-10	10/31/2014	5,200	NA

Southwest Tank Farm Diesel Release - July 2014 Navajo Refinery, Artesia, New Mexico

= not analyzed

Chavez, Carl J, EMNRD

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, October 17, 2014 4:01 PM
То:	Chavez, Carl J, EMNRD
Cc:	Tsinnajinnie, Leona, NMENV; Crawford, Dan; Strange, Aaron; Schultz, Michele
Subject:	2014-10-17 hydrocarbons expressed to surface in Clark Draw/Eagle Draw
Attachments:	2014-10-17 Initial C-141 Hydrocarbons to surface in Clark Draw.pdf; HC stain in Clark
	Draw 101714 facing west.JPG; hydrocarbon stain in Clark Draw 101714.JPG

Carl,

Please find the attached Initial C-141 for the event we discussed by phone earlier today. Also attached are photos of the area taken today. If you have any questions, please feel free to call me to discuss. Thanks, Robert

Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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

Form C-141 Revised August 8, 2011

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

1220 5. 50. 11000				Sa	inta Fe, NM 873	005			
			Rele	ase Notific	cation and Co	orrective A	ction		
					OPERA	TOR	🖂 _Initia	al Report	Final Report
Name of Con	mpany 1	Navajo Refir	ning Com	pany, L.L.C.	Contact R	obert Combs			
Address 501 E. Main St. Artesia, NM 88210			Telephone I	No. 575-746-5	382				
Facility Nam	ne Navaj	o Refining (Company,	L.L.C. Artesia	Facility Typ	e Refinery			
Surface Owr	ner			Mineral (Dwner		API No).	
				LOCA	ATION OF RE	LEASE			
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	

Latitude____Longitude___

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater	Volume of Release	Volume Re	ecovered: N/A, Absorbent
expressed at the ground surface due to elevated water table.	approximately < 1 gallon		plied to recover hydrocarbons.
Source of Release Impacted groundwater	Date and Hour of Occurrence	Date and H	lour of Discovery
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10/17/14 Unknown hour	10/17/14@	11 am
Was Immediate Notice Given?	If YES, To Whom?		
🛛 Yes 🗌 No 🗌 Not Required	National Response Center at 12:35	5 pm	
	OCD Santa Fe office at 1:47 pm	-	
	OCD Artesia office, left message.		
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	atercourse.	
Yes 🛄 No	< 1 gallon		
If a Watercourse was Impacted, Describe Fully.*			
A small area of stained concrete located at the base of Clark Draw. There	e is no water flow in the waterway at	this time.	
Describe Cause of Problem and Remedial Action Taken.*	· · · · · · · · · · · · · · · · · · ·		
A stained area was discovered in the base of Clark Draw on 10/17/14. The	here is not an active release of hydroc	arbons, but the	e impacts are being addressed
by removal of hydrocarbons by absorbent materials. An absorbent boon	a will be installed downstream to prev	ent residual h	ydrocarbons to be released
during flowing conditions in the waterway.			
Describe Area Affected and Cleanup Action Taken.*			
The stained area was confined to a narrow irregular strip on the concrete.	The remedial action plan will be to	draw down the	water table in the area and
utilize the product recovery system to remove phase separated hydrocarb	ons in the area. A vacuum truck will	be used for the	e next several days to remove
any product collected in the adjacent monitoring well.			
A final C-141 report will be submitted to OCD and HWB once corrective	e actions, sample results, etc. are com	plete.	
I hereby certify that the information given above is true and complete to	the best of my knowledge and unders	tand that pursu	ant to NMOCD rules and
regulations all operators are required to report and/or file certain release r	notifications and perform corrective a	ctions for relea	ases which may endanger
public health or the environment. The acceptance of a C-141 report by the	ne NMOCD marked as "Final Report"	does not relie	eve the operator of liability
should their operations have failed to adequately investigate and remedia	te contamination that pose a threat to	ground water,	surface water, numan nearth
or the environment. In addition, NMOCD acceptance of a C-141 report of	does not relieve the operator of respon	isibility for co	mpliance with any other
fcderal, state, or local laws and/or regulations.			
	OIL CONSER	VATION	DIVISION
a Mull			
Signature:			
D' (1)() D 1 of Comba	Approved by Environmental Special	ist:	
Printed Name: Robert Combs			
		Equination F	latat
Title: Environmental Specialist	Approval Date:	Expiration D	/alc
E mail A ideans what some the A all the sting some	Conditions of Approval:		
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached 🗌
Date: 10/17/14 Phone: 575-746-5382			
Date: 10/17/14 Phone: 575-746-5382			

Date: 10/17/14 * Attach Additional Sheets If Necessary





### Chavez, Carl J, EMNRD

From:	Schultz, Michele <michele.schultz@hollyfrontier.com></michele.schultz@hollyfrontier.com>
Sent:	Thursday, July 17, 2014 3:03 PM
То:	Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD
Cc:	Combs, Robert; Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV; VanHorn, Kristen, NMENV; Crawford, Dan
Subject: Attachments:	Navajo Refining Company, LLC 7/15/14 Diesel line leak Initial C-141 071514 C-141 Initial.pdf

Leona, Carl – Attached is the initial C-141 report for Navajo Refining Company's diesel fuel line leak of 7/15/14. We are staging for the excavation work today and are awaiting recommendations from our consultant based on soil probes done this morning. The final C-141 will be submitted upon completion of the excavation and disposition of the impacted soil.

If you have questions, please contact me at 575-308-2141.

Micki Schultz, P.E., CHMM Environmental Specialist, Water and Waste Programs Navajo Refining Company 575-746-5281 (office) 575-308-2141 (cell) micki.schultz@hollyfrontier.com

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### State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Final Report

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

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

Initial Report

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# **Release Notification and Corrective Action**

### **OPERATOR**

Name of Company Navajo Refining Company, L.L.C.	Contact Micki Schultz
A Linear 501 E Main St Artesia NM 88210	Telephone No. 575-746-5281
Facility Name Navajo Refining Company, L.L.C. Artesia	Facility Type Refinery
Facility Name Travije Terming	API No.

Surface	Owner
Surface	Owner

Mineral Owner

### LOCATION OF RELEASE

[	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	

Latitude_32°50'38.95"N_ Longitude_104°23'40.85"W_

### NATURE OF RELEASE

NAIUKE	OF RELEASE	Tax to Downed 711 bbl Diegel
Type of Release Diesel Pipe Leak	Volume of Release	Volume Recovered 711 bbl. Diesel vacuumed and returned to the crude
Type of Release Diesei Tipe Leak	approximately 700 bbl.	process unit
		Date and Hour of Discovery
Source of Release Inter tank transfer pipe in a containment area	Date and Hour of Occurrence	7/15/14@7:10 am
	7/15/14 Unknown hour	1/15/1/(0/110 dil
Was Immediate Notice Given?	If YES, To Whom?	
X Yes No Not	Carl Chavez	
Required		
	Date and Hour 7/15/14 at 3:15 pt	n
By Whom? Micki Schultz	If YES, Volume Impacting the W	atercourse.
Was a Watercourse Reached?		
If a Watercourse was Impacted, Describe Fully.*		
I a watercourse was impacted, second of		
Describe Cause of Problem and Remedial Action Taken.* An older above ground diesel suction line developed a leak sometime du	wing the night where it penetrated an	earthen dike between two adjacent
An older above ground diesel suction line developed a leak sometime du	AOC Group 2) Because it had rained	during the night, rainwater had pooled in the
approximment areas at 1-434 in the Southwest talk farm (NOC 1, part of	i i i i i i i i i i i i i i i i i i i	water contained diesel product. The leaking
I low enote within the diked containinent areas. At the morning ones	. C	he pooled liquid to prevent volatile organics
l line was isolated and blocked off to prevent any additional release , ap-	and a support or day	vacuumed the diesel/water/toam liquid
line was isolated and blocked off to prevent any additional release. Vapu from being released during the heat of the day. Three vacuum trucks we mixture. The volume of water and diesel from each truckload was recor	ded separately to determine the amou	int of diesel that leaked and was returned to the
mixture. The volume of water and diesel from each truckload was record	dod boparatory	

Describe Area Affected and Cleanup Action Taken.*

crude process unit.

7/15/14 Two tank containment areas retained all of the leaked diesel fuel. All of the liquid was suctioned up via vacuum trucks and returned to the process at the crude tank. Absorbent pads and socks were applied to the remaining small areas where diesel fuel could not be removed. At the close of the initial

response action, there was no free liquid remaining in either containment area. 7/16/14 The earthen dike around the pipe leak was removed to locate the source of the leak. The pipeline will be inspected to determine the necessary

repair. The area is being staged to begin removal of impacted soil/gravel. 7/17/14 NRC's remediation contractors will commence surgical removal of impacted soil in a sequential manner until visibly saturated soil is abated. Impacted soil will be initially staged on HDPE liners and then transferred to roll-off bins.

A formal report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

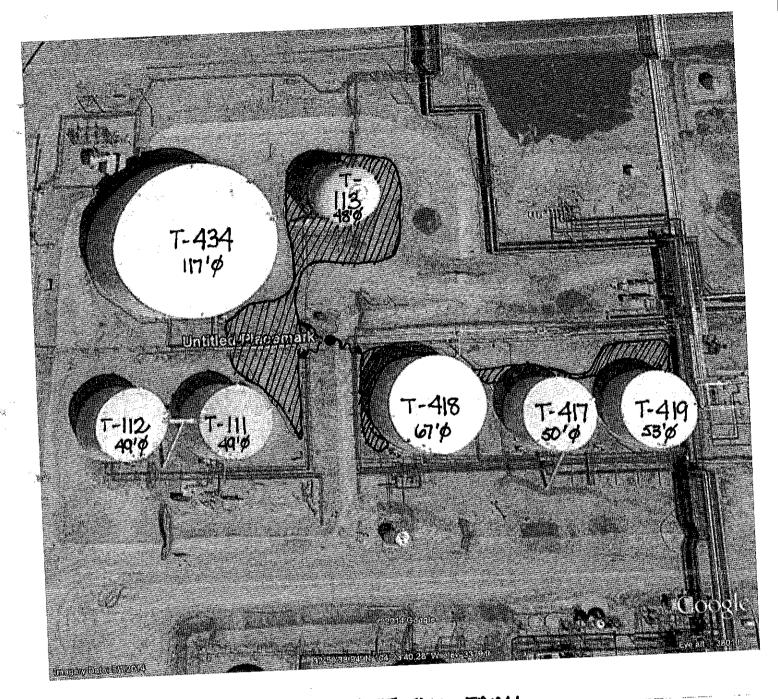
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

	OIL CONSERVAT	ION DIVISION
Signature: Muchi Schuth	Approved by Environmental Specialist:	
Printed Name: Micki Schultz		iration Date:
Title: Environmental Specialist	Approval Date.	
E-mail Address: micki.schultz@hollyfrontier.com	Conditions of Approval:	Attached
Date: 7/16/14 Phone: 575-746-5281		

1

* Attach Additional Sheets If Necessary

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NAVAJO REFINERY SOUTHWEST TANK FARM 7/15/14 DIESEL FUEL LINE LEAK C DIKE (FLOW FROM WITHIN DIKE)

### Chavez, Carl J, EMNRD

From:	Chavez, Carl J, EMNRD
Sent:	Thursday, April 24, 2014 4:29 PM
То:	'Krueger, Pamela'; Tsinnajinnie, Leona, NMENV
Cc:	Robert Combs; dan.crawford@hollyfrontier.com; Turner, Maisha; Sanchez, Daniel J.,
	EMNRD; Griswold, Jim, EMNRD; Dade, Randy, EMNRD
Subject:	RE: Navajo - Groundwater monitoring and PSH

Pam, et al.:

New Mexico Oil Conservation (OCD) has completed a preliminary review of the information provided and map of proposed MW locations.

The proposed MWs do not appear to be in line with contaminant migration (PSH & possibly dissolved phase hydrocarbons).

OCD recommends a MW between RW-22 and KWB-11A; a MW at least 200 ft. ESE and ENE of KWB 11A to bracket the toe of PSH and any dissolved phase hydrocarbons.

Perhaps there is an explanation why the MWs are located north of the trend of ground water contamination?

Thank you.

### Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 O: (505) 476-3490 E-mail: <u>CarlJ.Chavez@State.NM.US</u>

Web: <u>http://www.emnrd.state.nm.us/ocd/</u>

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <a href="http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental">http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</a>



From: Krueger, Pamela [<u>mailto:pam.krueger@arcadis-us.com</u>]
Sent: Monday, April 21, 2014 2:04 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Robert Combs; <u>dan.crawford@hollyfrontier.com</u>; Turner, Maisha
Subject: Navajo - Groundwater monitoring and PSH

Carl and Leona -

The first semiannual 2014 groundwater monitoring event began in March, beginning with the sitewide potentiometric survey. On March 26, 2014, the sampling crew gauged the wells located in the pecan orchard east of Bolton Road and found unexpected PSH. The attached figure (developed for another purpose) shows the wells in the orchard and in the vicinity for your reference.

On March 26, 2014, the sampling crew recorded no PSH present in KWB-7, KWB-11A, and KWB-11B. On April 17, 2014, the crew was planning to collect samples from these wells and noted the presence of PSH in wells KWB-7 and KWB-11A. No PSH was present in KWB-11B. The gauging measurements are as follows:

- KWB-7, 3/26/14, no PSH, DTW = 25.33 ft, PSH thickness = 0 ft
- KWB-7, 4/17/14, DTP = 24.49 ft, DTW = 24.53 ft, PSH thickness = 0.04 ft
- KWB-11A, 3/26/14, no PSH, DTW = 26.41 ft, PSH thickness = 0 ft
- KWB-11A, 4/17/14, DTP = 25.59 ft, DTW = 25.70 ft, PSH thickness = 0.11 ft
- KWB-11B, 3/26/14, no PSH, DTW = 27.11 ft, PSH thickness = 0 ft
- KWB-11B, 4/17/14, no PSH, DTW = 26.35 ft, PSH thickness = 0 ft

PSH = phase separated hydrocarbons DTP = depth to product DTW = depth to water ft = feet

KWB-7 and KWB-11A have not had PSH present in the past. As per the FWGMWP, the presence of PSH in these two wells is being reported within 7 days of the discovery.

If you have questions, please feel free to contact Robert Combs at (575) 746-5382.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77043 T: 713.953.4816 | M: 713.249.8548 | F: 713-977-4620 Connect with us! <u>www.arcadis-us.com | LinkedIn | Twitter | Facebook</u>

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- ✤ MONITORING WELL
- RECOVERY WELL
- IRRIGATION WELL
- PROPOSED MONITORING WELL LOCATIONS
- PROPOSED TEMPORARY MONITORING WELL LOCATION

220

GRAPHIC SCALE

440

Feet



ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

PLANNED WELL LOCATIONS, CHASE FARMS, LLC



FIGURE

Α

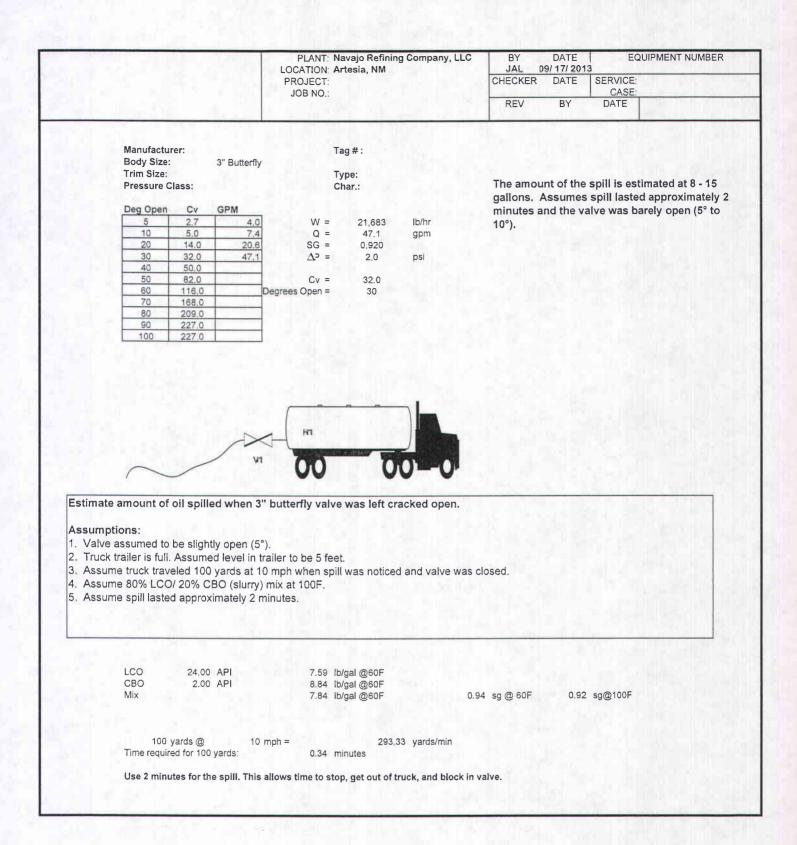
State of New Mexico Energy Minerals and Natural Resources

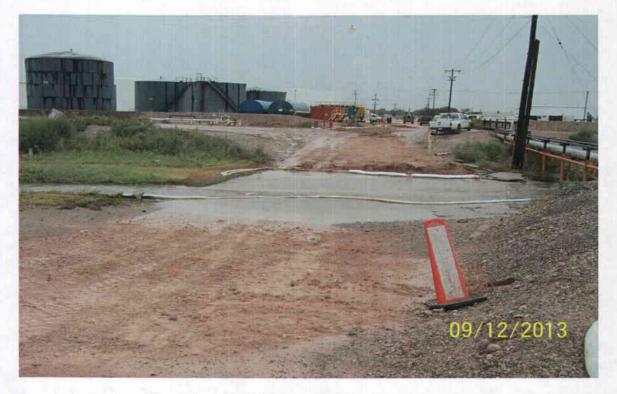
> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505

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

1220 S. St. Fran	icis Dr., Sant	a Fe, NM 87505	5	S	anta F	e, NM 875	505		
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		St. Artesia,	NM 882	10			No. 575-746-52		
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Unit Letter	Section	Township	Range	Feet from the	North	/South Line	Feet from the	East/West Lir	e County
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			rebe ne	in r oo to bouin	1 mill	9/12/13 @	~12:35 pm	~ 12:4	0 pm
Was Immedi	iate Notice (		] Ves	🗌 No 🗌 Not r	equired				er, OCD Artesia, EPA Region V EPC, OCD Santa Fe, OCD Artes
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By Whom? ]	NRC – Micl	ki Schultz: Fi	rst call to	OCD Artesia - M	like	Date and I	Hour 9/12/13 (all	p.m.) NRC 2:15	OCD Artesia 2:15; EPA Regior
		briella Combs				VI 2:30; N	MED 2:40; SER	C 2:44; LEPC 2	48; OCD Santa Fe 2:54; OCD
Was a Water	course Rea	ched?	-		-		58; State Police 3: olume Impacting		
			Yes	No		Less than	15 gallons to norr	mally dry Eagle	Draw that was flowing due to a
If a Waterco	urse was Im	apacted. Descr	ibe Fully.	* Normally dry E	agle Dr	rainfall ev		during rainfall e	vents, passes through the Navajo
Refinery on	its way to th	ne Pecos River	r approxin	nately 3 miles aw	ay. The	section passin	ng through the ref	inery is a concre	te swale with earthen dikes on be
sides. There it to the Sour	are two con th Plant alor	crete-paved long Freeman A	ow water i venue. A:	oadway crossings s he entered the lo	s at Free	man Avenue	and 5 th Street. A t saw oil on the roa	ruck loaded wit d behind him an	n CBO from T-65 was to transpo d realized it was coming from hi
truck. As the	ere was appr	oximately 6 in	nches of w	vater in the crossi	ng due t	o a rainfall ev	ent, he continued	through the cro	ssing, resulting in a release to
water. Describe Ca	use of Prob	em and Reme	dial Actic	n Taken.* The	driver cl	hecked the ho	se/valve and dete	rmined that he h	ad not properly closed the valve.
He closed th	e valve and	stopped the re	elease.				INCOME.		
									ained on the gravel roadway and of the crossing right to the
waterline to	prevent any	more oil fron	n reaching	the flowing wate	er. Addit	ional soil was	placed behind th	e dikes to soak	p the oil on the ramps and
roadway. Sin	multaneousl	y, oil-sorbent	booms we	ere placed across	Eagle D	raw just down	nstream of the rele	ease, and along the edge. Further of	he edges to retain the oil in quiet lownstream at the second crossin
(5 th St.), add	itional boon	ns were placed	d and a div	version eddy crea	ted to er	hable skimmir	ig sheen with oil s	sorbent pads. A	vacuum truck was called to the
scene, but th	ere was not	hing more tha	n an oil sh	neen for it to sucti	on. Atl	hird set of boo	oms were placed f	further downstre	am at the farm field fence, and a place overnight and showed no
sign of oil th	e next morr	ning. The sand	l/soil was	removed within 2	hours f	rom the Freer	nan St. roadway a	ind crossing ram	ps and put into rolloff bins for
disposal as r	ion-hazardo	us waste. Whe	en there w	as no longer visit	ble oil or	sheen noted	at the booms and	along the edges	of Eagle Draw, the booms and Draw were left in place overnigh
then drumm	ed for dispo	sal as non-haz	zardous wa	aste.					
									oursuant to NMOCD rules and releases which may endanger
public health	n or the envi	ironment. The	e acceptan	ce of a C-141 rep	ort by th	ne NMOCD n	narked as "Final F	Report" does not	relieve the operator of liability
should their	operations l	have failed to	adequately	y investigate and $C_{141}$	remedia	te contaminat	ion that pose a the	reat to ground w	ater, surface water, human health or compliance with any other
		ws and/or reg			report	abes not rene	re the operator of	responsionity to	a comphance with any other
	11	. 0				1.02	OIL CON	SERVATIO	N DIVISION
Signature:	Mick	iSch	ult	T					
Printed Nam			1			Approved by	Environmental S	specialist:	

Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: micki.schultz@hollyfrontier.com Date: 12/30/2013 Phone: 757-746-5281		Conditions of Approval:	Attached X Valve Release Calculations Non-Hazardous Manifests Cleanup photos





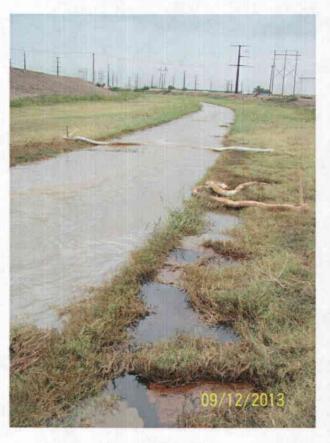
Freeman St. crossing – Site of release to Eagle Draw – Sand placed on concrete pavement to prevent oil movement to Eagle Draw. Booms placed to capture oil in eddies.



Freeman St. crossing - Removing sand from concrete pavement



Freeman St. - scraping sand from pavement into a rolloff bin



Looking east from Freeman St. crossing - Boom across Eagle Draw, booms used to soak up eddied oil



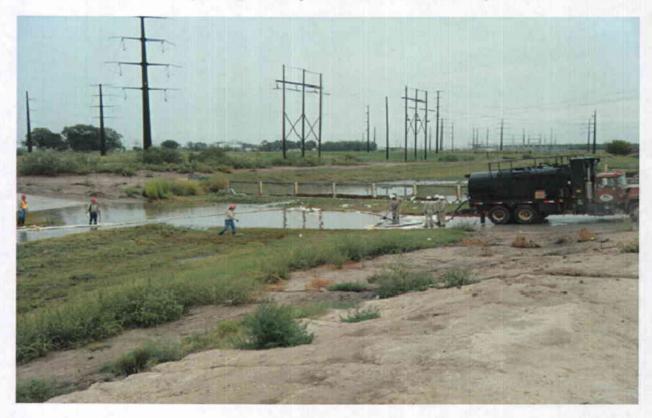
Cleaning oil from eddies. Current in concrete swale pushed oil into eddies on the outer curve, making it easier to collect and capture



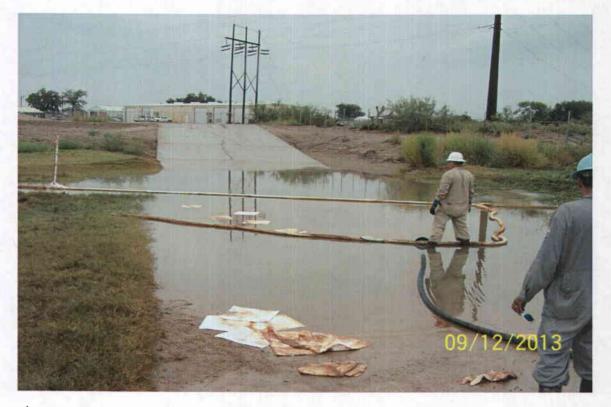
Looking west at Freeman St. crossing. Booms deployed.



5th St. Crossing – Boomed oil trap, oil-only skimmer pads, vacuum truck – west of cow pasture fence



5th St. Crossing – Boomed oil trap, oil-only skimmer pads, vacuum truck – west of cow pasture fence



 $5^{\text{th}}$  St. crossing – oil trap and vacuum truck suctioning, oil sorbent pads skimming



 $5^{\text{th}}$  St. crossing – suctioning oil trap with vacuum truck hose



 $5^{\text{th}}$  St. crossing – oil sheen in trap, oil sorbent pads skimming



 $5^{\text{th}}$  St. crossing – finishing skimming by hand with oil sorbent pads



Farm Field Fence - Navajo property both sides - Using oil sorbent pads to capture sheen



Farm Field Fence - Navajo property both sides - Boom and trap arrangement



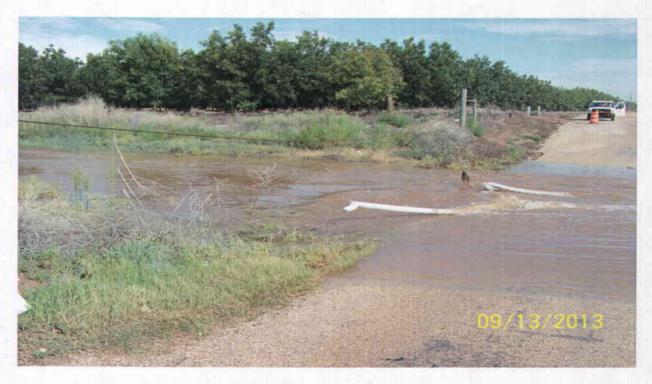
Eagle Draw east of spill - Mopping up with oil sorbent pads and socks



Eagle Draw further downstream – Mopping up with oil sorbent pads



Bolton Road boom deployment - Clean boom at east end of Navajo property



Bolton Road boom deployment - 20 hours later - Clean boom at east end of Navajo property



Bolton Road boom - 20 hours later, still clean

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ENVIRÓNMENTAL SOLUTIONS	

#### NE JEXICO NON-HAZARDOUS OILFEILD WASTE MANIE (PLEASE PRINT)

Company Man Contact Information

Name _____

ENVIRONMENTAL SOLUTIONS	1.1							
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erators Name	Navaio Re	efining Co. LI	C	Lease/Well Name & No.	1.1.1	Sec. 2		1.1
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				API No.				
, State, Zip	Arlesia, N	M 28211-013	59	Rig Name & No.				
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	And the second second second second	GENER	ATOR	NO. 1	22441
erator No.	51/A		Location of Origin Lease/Well		
erators Name	Navajo Refining (	CO.LLC	Name & No.	-	
ress	PO Box 159		County		N/A
		te state	API No.		
, State, Zip	Artesia, NM 3821	1-0159	Rig Name & No AFE/PO No		
ne No.	EXEMPT E&P Waste/Service	La superior de la competition		ste type in barrels or cubic.	vards
Based Muds	and the second se	ABLE WATERS	lace volume next to we	INJECTABLE WATERS	
Based Cuttings	Washout Wa	ater (Non-Injectable)		Washout Water (Injectable) Completion Fluid/Flow back (ir	viertable)
iter Based Muds iter Based Cuttings		Fluid/Flow back (Non-Injectable) /ater (Non-Injectable)		Produced Water (Injectable)	
duced Formation Solids		ne Water/Waste (Non-Injectable		Gathering Line Water/Waste (I	njectable)
ik Bottoms P Contaminated Soil	INTERNALU	A REAL PROPERTY AND A REAL	And the state of the state	OTHER EXEMPT WASTES (type a	nd generation process of the waste)
s Plant Waste		out (exempt waste)			
STE GENERATION PROCE	SS: DRILLING	COMPL		PRODUCTION	GATHERING LINES
	All non-exempt E&P waste must be	NON-EXEMPT E&P Waste/Serv	ice Identification and Amo hold limits for toxicity (TCI	unt P), Ignitability, Corrosivity and R	eactivity.
n-Exempt Other	All hor exempt car waste onst be			m Non-Exempt Waste List on I	
	and the second	B - BARRELS	L - LIQUID	Y - YARDS	Treating
IANTITY	and the second			1 The monthlese	The second s
ereby certify that according to d is (Check the appropriate cla		ecovery Act (RCRA) and the US En	vironmental Protection Ag	Elicy spary 1980 regulatory acto	rmination, the above described waste
RCRA EXEMPT:	Oil field wastes generated from	n oil and gas exploration and proc	luction operations and are	not mixed with non-exempt wa	ste (R360 Accepts certifications on a p
RCRA NON-EXEMPT:	261 21-261 24, or listed hazard	zardous that does not exceed the dous waste as defined by 40 CFR, the appropriate items as provider RCRA Hazardous Waste An	part 261, subpart D, as am J)	aste hazardous by characteristic ended. The following document: Other (Provide Description Bel	is established in RCRA regulations, 40 ation demonstrating the waste as non ow)
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Version 1

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

<b>Release Notification and Corrective Action</b>												
						<b>OPERA</b>	ΓOR		🗌 Initial Report 🛛 🖾 Final Re			Final Report
Name of Co	mpany l	Navajo Refin	ning Com	pany, L.L.C.	(	Contact 1	Robert Combs					-
						Felephone N		382				
Facility Nar	ne Artesia	a Refinery			]	Facility Typ	e Petroleum	Refine	ry			
Surface Ow	ner	•		Mineral C	wner				API No			
Surface Ow	nei			1					711110	•		
TT to T and	a i		5			OF REI				a		
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/	West Line	County		
				Latitude	9	Longit	ude					
						OF REL						
Type of Rele	ase W	aste Water		INAI	UKE		EASE Release ~60 ba	arrels	Volume R	lecovered	~ 55 h	arrels
Source of Re			ew Main A	API lift station			lour of Occurrence			Hour of Dis		
Source of the	iouse se					09/03/2013				3 at ~15:30		
Was Immedia	ate Notice (					If YES, To						
		$\boxtimes$	Yes	] No 🗌 Not Re	equired		a Fe, Carl Chavez					
							nta Fe, Leona Tsi					
By Whom?	Robert C	ombs					nta Fe, Ruth Horo			), left messa	ge	
Was a Water						Date and Hour     09/03/13 at ~17:30       If YES, Volume Impacting the Watercourse.						
			Yes 🗵	No		,	······					
If a Watercou	irse was Im	pacted, Descr	ibe Fully	*								
		em and Reme										
				ine that leads to th	e aboveg	ground API s	eparator was strue	ck by ar	excavator.	The excav	ator wa	s digging in
the area for in	nstallation of	of a new lift st	ation as pa	art of the storm wa	ater lift s	tation and ta	nk installation pro					
				line was drained,	repaired	and put bac	k in service.					
		and Cleanup A			1 1		11	1. (	· · · 1 5	e 1 1 1		1) 1
				n progress. The fro system upstream of								
				soil was placed in								
				he waste is not co								
be considered	1 F037 or F	038 listed was	ste, as dese	cribed in the respo	onse repo	rt. However	, Navajo elected t	to mana	ge the soils	under a one	-time d	lesignation as
				ective characteriza			osition. Approxin	mately	1 tons of in	npacted soil	s were	disposed of
at the Rineco	hazardous	waste facility	in Benton	i, Arkansas on No	vember	15, 2013.						
I hereby certi	fy that the i	information gi	ven above	e is true and comp	lete to th	e best of my	knowledge and u	ndersta	nd that nurs	uant to NM	OCD n	iles and
regulations a	ll operators	are required to	o report a	nd/or file certain r	elease no	otifications a	nd perform correct	tive act	ions for rele	eases which	mav er	ndanger
				ce of a C-141 repo								
should their o	operations h	ave failed to a	adequately	v investigate and r	emediate	e contaminati	on that pose a thr	eat to g	round water	, surface wa	ter, hu	man health
				ptance of a C-141	report do	pes not reliev	e the operator of	respons	ibility for co	ompliance v	vith any	v other
federal, state,	or local lav	ws and/or regu	ilations.									
	1	hit					OIL CON	SERV	ATION	DIVISIC	<u>)N</u>	
Signature:	put	um										
						Annroved by	Environmental S	necialis	t.			
Printed Name	e: Robert (	Combs			1	-pproved by	Environmental D	rectails				
Title: Env	ironmental	Specialist			1	Approval Dat	e:		Expiration 1	Date:		
E-mail Addre	ess: rober	t.combs@holl	vfrontier o	com	6	Conditions of	Approval:				_	
	100001		Juonuori		`		· PProvan			Attached		

Date:	11/27/2013	Phone:	575-308-2718
 4 1	A 111-1 1 C1 . TCNT		

* Attach Additional Sheets If Necessary



Mr. Mike Holder Environmental Manager Navajo Refining Company, LLC 501 East Main Artesia, New Mexico 88211

Subject: Wastewater Sewer Line Spill Response

Dear Mr. Holder:

ARCADIS has prepared this release response report to describe activities that have occurred to address a release of water from the an underground process wastewater sewer line at the Navajo Refining Company (Navajo) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the September 3, 2013 release.

#### Release

On September 3, 2013, contract crews were excavating near the Main API separator for the installation of a new stormwater and API lift station. As shown on Figure 2, the new lift station is located in the northeastern portion of the Refinery, within the wastewater treatment area. During the construction activities, the excavator struck and broke the underground process wastewater sewer line. Oily water was released from the line and contained within the lift station excavation.

Approximately 60 barrels of oily water was released into the lift station excavation. Photographs documenting the spill can be seen in Photographs 1 through 3 in Attachment A to this letter.

### Notification

Section 4.7.4 of the Post-Closure Care Permit (Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) requires that a new release from an existing Area of Concern (AOC) be reported within 15 days. AOC 12 encompasses the wastewater collection system throughout the refinery; thus this pipeline is a part of AOC 12. Figure 2 shows the location of the wastewater sewer line that was broken. ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620 www.arcadis-us.com

ENVIRONMENT

Date: November 27, 2013

Contact: Pamela R. Krueger

Phone: 713.953.4816

Email: pam.krueger@arcadis-us.com

Our ref: TX000870

### Imagine the result

### ARCADIS

Mr. Mike Holder November 27, 2013

Section 2.D.1 of the Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resource Department Oil Conservation Division (OCD) for the facility requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.

Navajo personnel reported the release of wastewater from the sewer line to NMED and OCD both via phone call on September 3, 2013. An initial C-141 release report was submitted to both the HWB and OCD on September 9, 2013. Thus, the initial reporting requirements of both the OCD Discharge Permit and the HWB Post-Closure Care Permit have been met. A final C-141 report has been included in Attachment B to this letter.

### **Remedial Actions**

Navajo personnel plugged the sewer line and used a vacuum truck to collect free liquids immediately after the spill occurred. Approximately 55 barrels of oily water was recovered and returned to the wastewater treatment system upstream of the API Separator. Navajo contract personnel excavated 10.97 tons of stained soil and placed it in a roll-off bin. As discussed below, Navajo does not believe that the excavated soil was hazardous waste; however, as a conservative measure the soil was disposed of as hazardous waste at the Rineco hazardous waste facility in Benton, Arkansas on November 15, 2013. The waste manifest has been included in Attachment C to this letter.

Navajo personnel drained and repaired the sewer line. The repaired sewer line and the completed construction are shown in Photographs 6 through 10 in Attachment A to this letter.

#### Waste Characterization

Navajo personnel collected a sample of the excavated soil for waste characterization. The waste soil was analyzed via the Toxicity Characteristic Leaching Procedure (TCLP) for Metals, Volatile Organic Compounds (VOCs), and Semivolatile Organic Compounds (SVOCs) and was also analyzed for reactive cyanide, reactive sulfide, ignitability and pH. A copy of the laboratory analytical report is provided on CD in Attachment D to this letter.

Table 1 presents a summary of the impacted soil analytical data. As shown in Table 1, VOCs, SVOCs and reactive cyanide were not detected above the laboratory reporting limit. Barium was detected at 0.137 milligrams per liter (mg/L) which is below the characteristic hazardous waste limit of 100 mg/L. All other metals were not detected above the laboratory reporting limit. Reactive sulfide was detected at 242 milligrams

### ARCADIS

Mr. Mike Holder November 27, 2013

per kilogram (mg/kg), which is below the characteristic hazardous waste limit of 500 mg/kg. Based on the analytical results, the soil is not classified as hazardous by characteristic.

NMED stated in an email that "process water is considered hazardous waste as it could be characteristic for benzene (F037/F038 waste) when lateral flow ceases in the process sewer or it could contain other K-listed components." Per Title 40 of the Code of Federal Regulations (CFR) Part 268 Subpart D, F037 waste is defined as "petroleum refinery primary oil/water/solids separation sludge" and F038 waste is defined as "petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters." This incident involved a discharge of flowing wastewater from a pipe upstream of the primary separator, and did not contain nor deposit sludge. The discharge itself did not generate sludge within the spill site as the liquids were contained and recovered. Thus, ARCADIS does not believe that the impacted soil meets the definition of either F037 or F038 because it does not contain either F037 or F038 sludge.

Navajo personnel collected a sample of the recovered liquid and analyzed the sample for selected VOCs, SVOCs, and metals. The liquid analytical results are summarized in Table 2 and compared to the characteristic hazardous waste standards. A copy of the laboratory analytical report is provided on CD in Attachment D to this letter. As shown in Table 2, the wastewater sample contained benzene at a concentration of 2.4 mg/L which is above the characteristic hazardous waste limit of 0.5 mg/L. However, as defined in 40 CFR Appendix VII to Part 261, F037 and F038 wastes are considered listed hazardous wastes due to the following constituents: benzene, benzo(a)pyrene, chrysene, lead and chromium. As shown on Table 2, benzo(a)pyrene, chrysene and chromium were not detected above the laboratory reporting limit and lead was detected at 0.0164 mg/L, which is below the hazardous waste characteristic limit of 5 mg/L. The liquid, while characteristically hazardous for benzene, did not exhibit elevated concentrations of the other constituents that form the basis for listing for F037 and F038 wastes and, thus, should not be considered F037 or F038 hazardous waste. Since the wastewater should not be considered listed hazardous waste, the soil saturated with the spilled wastewater should not be considered listed hazardous waste.

Notwithstanding the foregoing, Navajo elected to manage the soils under a one-time designation as F037 wastes for the purpose of prompt and protective characterization and off-site disposition. Approximately 11 tons of impacted soils were characterized in this manner and, on November 15, 2013, were disposed of at the Rineco hazardous waste facility in Benton, Arkansas.

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Mr. Mike Holder November 27, 2013

### Conclusion

The remedial response to the September 3, 2013 release has been completed. All visually stained soils have been excavated and disposed of at an appropriate waste management facility. No further remedial action is recommended at this time.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

ARCADIS U.S., Inc.

Pamela R. Krueger Senior Project Manager

Enclosures: Tables Figures Attachment A: Photographic Log Attachment B: Final C-141 Incident Report Attachment C: Waste Manifests Attachment D: Analytical Reports (on CD)



Tables

### Table 1 - Excavated Soil Analytical Results Wastewater Sewer Line Spill at Main API Separator Navajo Refinery, Artesia, New Mexico

	Wastewater Spill at Lift Station					
	Excavation					
Date Sa	Date Sample Collected:					
	Hazardous					
Analyte	Waste Limit	Result	RL			
TCLP Volatile Organic Compoun	ds (mg/L)					
1,1-Dichloroethene	7.00E-01		0.1			
1,2-Dichloroethane	5.00E-01		0.1			
1,4-Dichlorobenzene	7.50E+00		0.1			
2-Butanone	2.00E+02		0.2			
Benzene	5.00E-01		0.1			
Carbon tetrachloride	5.00E-01		0.1			
Chlorobenzene	1.00E+02		0.1			
Chloroform	6.00E+00		0.1			
Tetrachloroethene	7.00E-01		0.1			
Trichloroethene	5.00E-01		0.1			
Vinyl Chloride	2.00E-01		0.1			
TCLP Semivolatile Organic Com	oounds (mq/L)					
2,4,5-Trichlorophenol	4.00E+02		0.005			
2,4,6-Trichlorophenol	2.00E+00		0.005			
2,4-Dinitrotoluene	1.30E-01		0.005			
Cresols, Total	2.00E+02		0.015			
Hexachlorobenzene	1.30E-01		0.005			
Hexachlorobutadiene	5.00E-01		0.005			
Hexachloroethane	3.00E+00		0.005			
Nitrobenzene	2.00E+00		0.005			
Pentachlorophenol	1.00E+02		0.005			
Pyridine	5.00E+00		0.005			
TCLP Metals (mg/L)						
Arsenic	5.00E+00		0.05			
Barium	1.00E+02	0.137	0.05			
Cadmium	1.00E+00		0.02			
Chromium	5.00E+00		0.05			
Lead	5.00E+00		0.05			
Mercury	2.00E-01		0.0002			
Selenium	1.00E+00		0.05			
Silver	5.00E+00		0.05			
Reactivity (mg/kg)						
Reactive Cyanide	2.50E+02		0.1			
Reactive Sulfide	5.00E+02	242	40			
Ignitability (burn rate, mm/sec)		Nega	tive			
pH (pH units)	< 2 or > 12.5	7.61				

Notes and Abbreviations:

X

Value exceeds TCLP hazardous by characteristic value as defined in 40 CFR §261. Blank cells indicate that the reported result was "not detected"

at the reporting limit provided.

CFR = Code of Federal Regulations mg/kg = milligrams per kilogram

mg/L = milligrams per liter

RL = Reporting Limit

TCLP = Toxicity Characteristic Leaching Procedure

#### Table 2 - Wastewater Liquid Analytical Results Wastewater Sewer Line Spill at Main API Separator Navajo Refinery, Artesia, New Mexico

	API Excavation			
Date	9/3/2013			
	Hazardous			
Analyte	Waste Limit	Result	RL	
Volatile Organic Compounds	s (mg/L)			
1,1,1-Trichloroethane			0.25	
1,1,2,2-Tetrachloroethane			0.25	
1,1,2-Trichloroethane			0.25	
1,1-Dichloroethane	7.00E-01		0.25	
1,1-Dichloroethene	5.00E-01		0.25	
1,2-Dibromoethane			0.25	
1,2-Dichloroethane			0.25	
Benzene	5.00E-01	2.4	0.25	
Carbon tetrachloride	5.00E-01		0.25	
Chloroform	6.00E+00		0.25	
Ethylbenzene		2.4	0.25	
Methylene chloride			0.5	
Tetrachloroethene	7.00E-01		0.25	
Toluene		3.8	0.25	
Trichloroethene	5.00E-01		0.25	
Vinyl Chloride	2.00E-01		0.1	
Xylenes, Total		5.3	0.75	
Semivolatile Organic Compo	ounds (mg/L)			
1-Methylnaphthalene		370	0.38	
2-Methylnaphthalene		500	0.38	
Benzo(a)pyrene			0.38	
Chrysene			0.38	
Naphthalene		370	0.38	
Metals (mg/L)				
Aluminum		1.86	0.1	
Arsenic	5.00E+00	0.13	0.05	
Barium	1.00E+02	0.0656	0.05	
Boron		1.21	0.05	
Cadmium	1.00E+00		0.02	
Chromium	5.00E+00		0.05	
Cobalt		0.00872	0.05	
Copper		0.0456	0.05	
Iron		6.9	2	
Lead	5.00E+00	0.0164	0.05	
Manganese		0.078	0.05	
Molybdenum		0.0894	0.05	
Mercury	2.00E-01	0.00205	0.0008	
Nickel		0.0771	0.05	
Selenium	1.00E+00	0.742	0.05	
Silver	5.00E+00		0.05	
Uranium			0.05	
Zinc		0.365	0.05	

## Notes and Abbreviations:

Value exceeds hazardous by characteristic value as defined in 40 CFR §261. Blank cells indicate that the reported result was "not detected"

at the reporting limit provided.

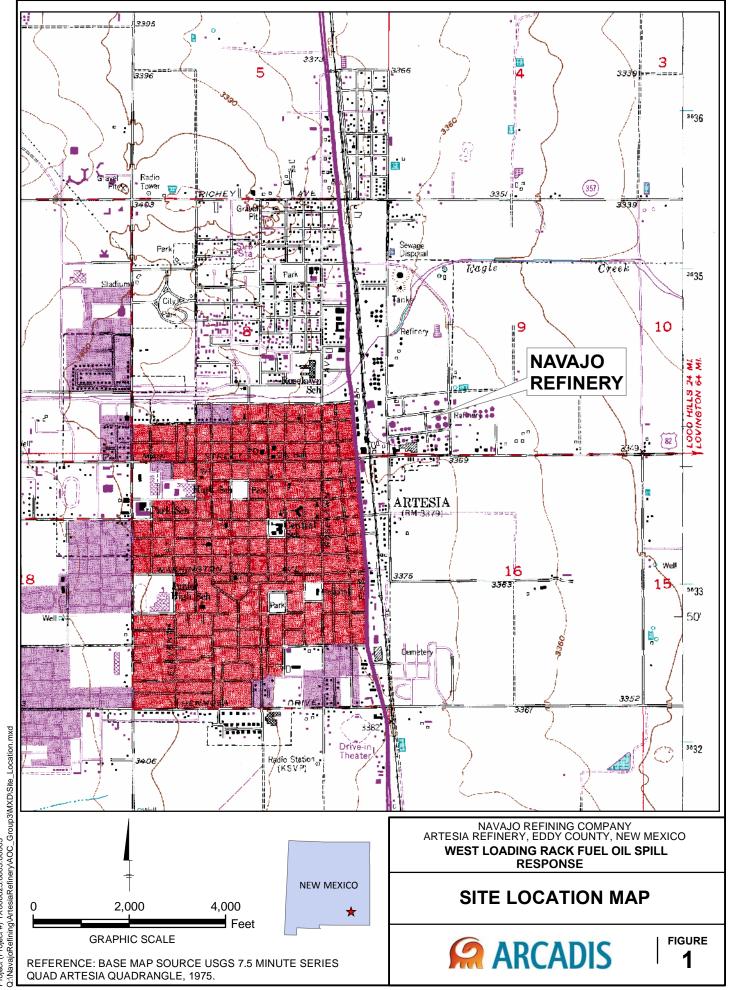
CFR = Code of Federal Regulations

mg/L = milligrams per liter

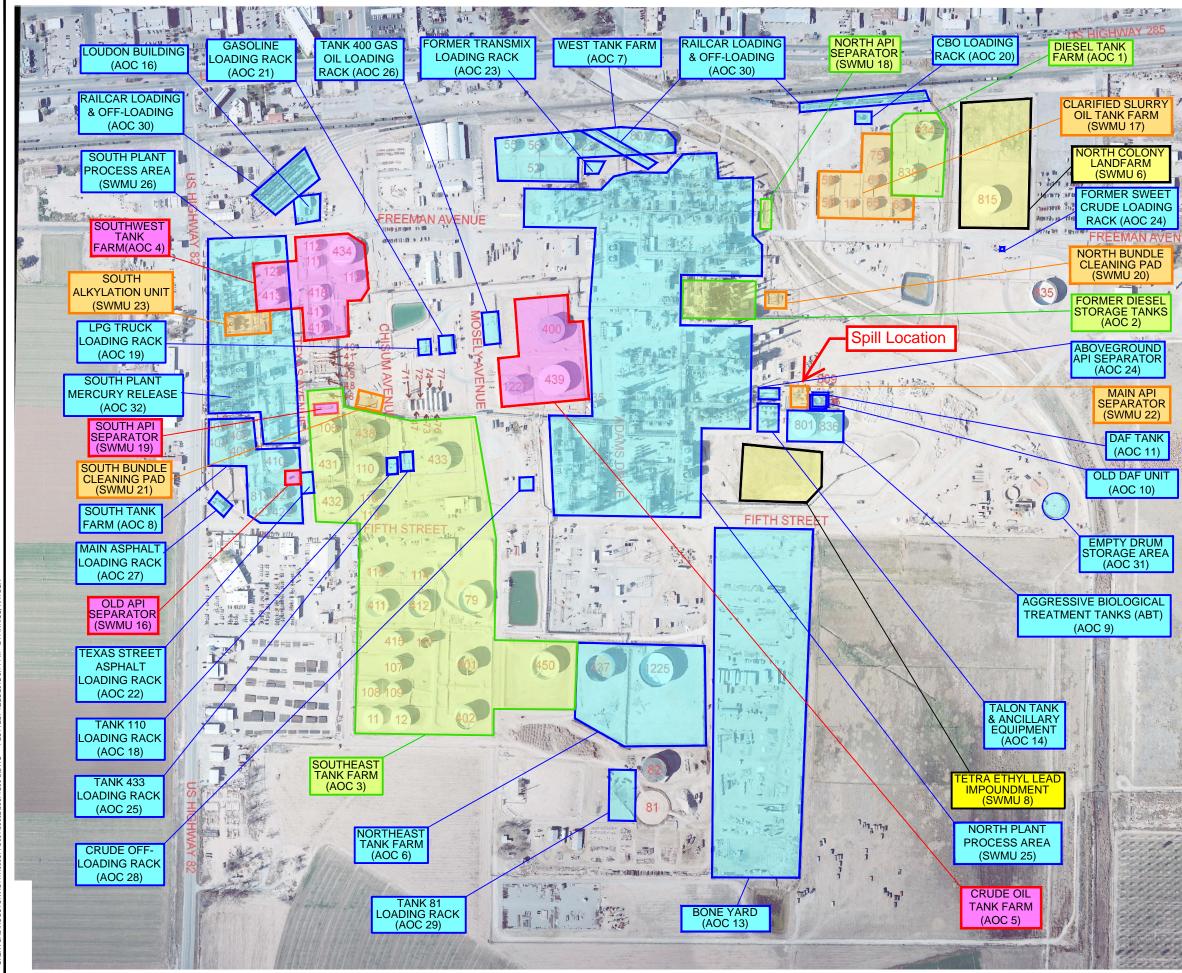
RL = Reporting Limit

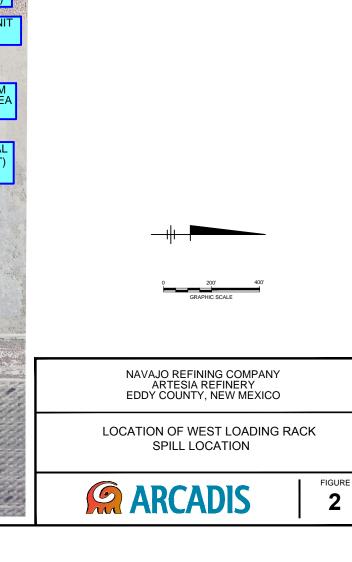


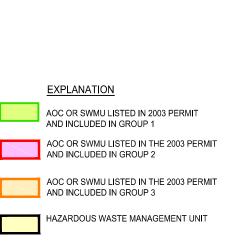
Figures



CITY: SF DIV/GROUP: ENV/IM DB: K ERNST LD: S KELLY PIC: PM: TR: Project (Project #) TX000825.0003.00003 Q:\NavajoRefining\ArtesiaRefineryAOC_Group3\MXD\Sfie_Location.mxd







a second second second

AOC OR SWMU ADDED IN 2010 PERMIT MODIFICATION



Attachment A

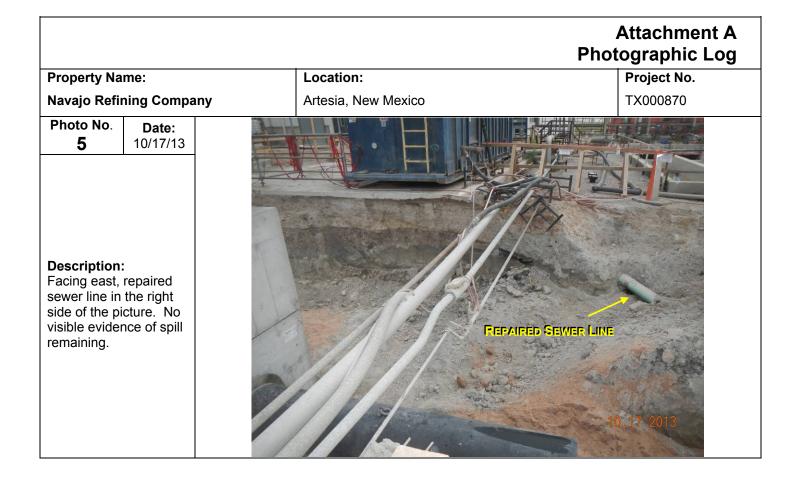
Photographic Log

			Attachment A Photographic Log
Property Na	ime:	Location:	Project No.
Navajo Refi	ning Compa	ny Artesia, New Mexico	TX000870
Photo No. 1	<b>Date:</b> 9/3/13		
<b>Description</b> Facing north northern port excavation w spilled liquid contained.	east, tion of the vhere		

			Attachment A Photographic Log
Property Na	ame:	Location:	Project No.
Navajo Refining Company		y Artesia, New Mexico	TX000870
Photo No. 2	<b>Date:</b> 9/3/13		
<b>Description</b> Facing east, portion of the excavation w sewer line or in the shado excavator.	southern e vith struck n far right		TEAMING SEWIER JAINE

				Attachment A Photographic Log	
Property Na	ame:		Location:	Project No.	
Navajo Ref	ining Compa	any	Artesia, New Mexico TX000870		
Photo No. 3	<b>Date:</b> 9/3/13	14.3			
<b>Description</b> Facing east sewer in the the excavate	, struck shadow of			EAKING SEWER LINE	

			Attachment A Photographic Log
Property Name:		Location:	Project No.
Navajo Ref	ining Company	Artesia, New Mexico	TX000870
Navajo Refining Company         Photo No.       Date:         4       10/15/13         Description:       Facing east, repaired sewer line on the left side of the picture. Main API in background.       Main API in background.			





Attachment B

Final C-141 Incident Report

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action												
						<b>OPERA</b>	ΓOR	🗌 Initial Report 🛛 🛛 Final Report				
Name of Co	mpany l	Contact 1	Robert Combs									
							Telephone No. 575-746-5382					
						Facility Typ	e Petroleum	Refine	ry			
Surface Owner Mineral Owner									API No			
Surface Ow	nei			1					711110	•		
Unit Letter         Section         Township         Range         Feet from the         North/South Line         Feet from the         East/West Line         County												
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/	West Line	County		
				Latitude	9	Longit	ude					
						-						
Type of Rele	NATURE OF RELEASE           Type of Release         Waste Water           Volume of Release         ~60 barrels           Volume Recovered         ~55 barrels										arrels	
Source of Re			ew Main A	API lift station			lour of Occurrence			Hour of Dis		
Source of the	iouse se					09/03/2013				3 at ~15:30		
Was Immedia	ate Notice (					If YES, To						
		$\boxtimes$	Yes	] No 🗌 Not Re	equired	OCD Santa Fe, Carl Chavez, left message						
						NMED Santa Fe, Leona Tsinnajinnie, left message						
By Whom?	Robert C	ombs				NMED Santa Fe, Ruth Horowitz (Spill Hotline), left message         Date and Hour       09/03/13 at ~17:30						
Was a Water						If YES, Volume Impacting the Watercourse.						
			Yes 🗵	No			······					
If a Watercou	irse was Im	pacted, Descr	ibe Fully ³	*								
		em and Reme										
				ine that leads to th	e above	ground API s	eparator was strue	ck by ar	excavator.	The excav	ator wa	s digging in
the area for in	nstallation of	of a new lift st	ation as pa	art of the storm wa	ater lift s	tation and ta	nk installation pro					
				line was drained,	, repaired	l and put bac	k in service.					
		and Cleanup A			1 1		11	1 (	· · · 1 5	e 1 1 1		1) 1
				progress. The fro system upstream of								
				soil was placed in								
				he waste is not co								
be considered	1 F037 or F	038 listed was	te, as desc	cribed in the respo	onse repo	ort. However	, Navajo elected t	to mana	ge the soils	under a one	-time d	lesignation as
				ective characteriza			osition. Approxin	mately	1 tons of in	npacted soil	s were	disposed of
at the Rineco	hazardous	waste facility	in Benton	, Arkansas on No	vember	15, 2013.						
I hereby certi	fy that the i	information gi	ven above	e is true and comp	lete to th	e best of my	knowledge and u	ndersta	nd that nurs	uant to NM	OCD n	iles and
regulations a	ll operators	are required to	o report a	nd/or file certain r	elease no	otifications a	nd perform correct	tive act	ions for rele	eases which	mav er	ndanger
should their o	public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health									man health		
or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other												
federal, state, or local laws and/or regulations.												
	1		OIL CONSERVATION DIVISION									
Signature:	put	him										
-						Approved by Environmental Specialist:						
Printed Name: Robert Combs						Approved by Environmental Special						
Title: Environmental Specialist						Approval Dat	e:	Expiration Date:				
E-mail Addre	ess: rober	t.combs@holl	vfrontier o	com		Conditions of	Approval:					
E-mail Address: robert.combs@hollyfrontier.com						Conditions of Approval:			Attached			

Date:	11/27/2013		Phone:	575-308-2718
 4 1	A 1 11.1 1 C1	TCAT		

* Attach Additional Sheets If Necessary



Attachment C

Waste Manifests

			16 W- (40 - W-t)		2					Form	Approved. O	MR No. 20	050-0030	
			1. Generator ID Number	9817	1	1-80	0 - 42	4-930	0 4. Manifest	Fracking Nu	2346	JJ		
	5. Gene	erator's Name and Mailin	ng Address Navajo R	efining Co.L	LC (Arte	Generator's	Site Address (	if different that	an mailing addres	s) Co. LL	c (Arte	sia)		
	5. Generator's Name and Mailing Address Navajo Refining Co.LLC (Artoic) Navajo Refining Co.LLC (Artoic) Navajo Refining Co.LLC (Artesia) P.O., Box 159 Artesia, NM 88211-0159 USA Dotted Navajo Refining Co.LLC (Artesia)													
		tor's Phone: 575 sporter 1 Company Nan	r - 748 - 3311			U.S. EPA ID Number								
			luid Transpor	rts, Inc.	TXD 988057931 U.S. EPA ID Number									
	7. Tran	sporter 2 Company Nan	-luid Trans	sports J	U.S. EPA ID NUMBER									
	8. Designated Facility Name and Site Address RINECO ARD981057870										70			
	Facility	's Phone: 501-77	1007 Vi 8-9089 Benton,	AR 72016	цs A									
	9а. НМ		tion (including Proper Shipping Nan				10. Contair No.	ners Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes			
Г Ч		1. R.Q., NA30	P.G. III (F037	SEWER SLU	SOLIC	>,	I	CM	21,940	Р	F037			
ENERATOR		2.							· · ·	<u> </u>				
8  1														
		3.								<u> </u>		_		
		4.												
	14. Sr	ecial Handling Instruction	ons and Additional Information						nup from				- F	
		ERG #1	71 Chemtree	c Cust, #cc. Bin # 2556	N 15402 9 Ri	2			sup tron	n WIWI	Jewerr	ine p	WG	
											10-18		5	
	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.													
		ator's/Offeror's Printed/	Typed Name		S	ignature		Rloc			Mont	. *	Year	
INT'I	16. Int		odes - agent	701 1111	Export from	IU.S.	Port of en	ntry/exit:				1.0		
-		<u> </u>	ent of Receipt of Materials				Date leav	ing U.S.:						
TRANSPORTER	Trans	orter 1 Printed/Typed N JR Sa	ame dan		s (	ignature	l,				Monti	Day	Year	
DANS	Trans	porter 2 Printed/Typed N	Name Ne Gray			ignature	ula.	A	2		Mont	n Day	Year	
	18. Discrepancy													
	18a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full R									Full Reje	ection			
È	18b. Alternate Facility (or Generator)         Manifest Refe								U.S. EPA ID	Number	<u>-</u>			
EACI ITY	Facilit	y's Phone:					1							
DESIGNATED	18c. S	Signature of Alternate Fa	acility (or Generator)								Mon	th Day	Year	
	19. H	azardous Waste Report	Management Method Codes (i.e., a	codes for hazardous waste	treatment, dispo	sai, and recyc	ling systems)							
		HOLEL	2.		3.				4.	<u> </u>				
		esignated Facility Owne	r or Operator: Certification of receip	ot of hazardous materials co	_	inifest except Signature Y	as noted in Iter	m 18a	1.0		Mon	h Day	Year	
EF	A Form	8700-22 (Rev. 3-05)	Previous editions are obsolet	e.			Itt	NU	The	191	2_1//	IE	<u>IB</u>	



P.O. Box 729 Benton, AR 72018 (800) 377-4692 www.rineco.com

Navajo Refining Company, L.L.C. Environmental Manager P O Box 159 Artesia, NM 88211-0159

11/19/2013

# **Certificate of Disposal**

Navajo Refining Company, L.L.C., Artesia, NM Manifest # 008302346JJK Received 11/15/2013

This is to certify that the waste materials received from the above referenced generator and manifest number have been managed and disposed of in accordance with all applicable Federal, State, and Local laws and regulations.





Attachment D

Analytical Reports (on CD)



20-Nov-2013

Robert Combs Navajo Refining Company PO Box 1490 Artesia, NM 88211-1490

Tel: (575) 746-5382 Fax: (575) 746-5421

Re: WWTP Spill

Work Order: 1309450

Dear Robert,

ALS Environmental received 1 sample on 11-Sep-2013 09:30 AM for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is GF.

Regards,

Sonia West Electronically approved by: Sonia West

Sonia West Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887 ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Date: 20-Nov-13

Client: Project: Work Order:	Navajo Refining Company WWTP Spill <b>1309450</b>		,	Work Order S	ample Summary
	Client Sample ID API Excavation	<u>Matrix</u> Liquid	<u>Tag Number</u>	<u>Collection Date</u> 9/3/2013 16:58	Date Received         Hold           9/11/2013 09:30         □

Date: 20-Nov-13

Client:	Navajo Refining Company	
Project: Work Order:	WWTP Spill 1309450	Case Narrative

As per the clients request via phone conversation on November 15, 2013, this report has been revised to include Chrysene by method 8270.

Sample API Excavation was received in an unpreserved 1 Liter glass container. The sample was received outside of the recommended analytical holding time for water sample for Volatile Organics Method 8260 and Semivolatile Organics Method 8270; the data has been qualified with an "H".

Batch 73195, Total Metals Method 6020, Sample 1309616-01: MS/MSD performed on an unrelated sample.

Batch 73050, Semivolatile Organics Method 8270, Sample API Excavation was analyzed at 10X due to sample matrix and had initial vol of 200mL and final volume of 1.5mL.

Batch 73050, Semivolatile Organics Method 8270, Insufficient sample volume for MS/MSD. An LCS/LCSD pair provided as batch quality control.

Batch 73050, Semivolatile Organics Method 8270, Two surrogates did not meet the RPD limit in the LCS/LCSD pair; however, the individual percent recoveries were within control limits

Client:	Navajo Refining Company
---------	-------------------------

Project: WWTP Spill

Sample ID: API Excavation

Collection Date: 9/3/2013 04:58 PM

#### Work Order: 1309450 Lab ID: 1309450-01 Matrix: LIOUID

<b>Collection Date:</b> 9/3/2013 04:58 PM					Matr	ix: LIQUID	
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
MERCURY-SW7470A			SW7470		SW74	70	Analyst: OFO
Mercury	0.00205		0.000800	mg/L	1	9/18/2013	9/18/2013 04:02 PM
METALS			SW6020		SW30	10A	Analyst: SKS
Aluminum	1.86		0.100	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Arsenic	0.130		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Barium	0.0656		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Boron	1.21		0.500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Cadmium	U		0.0200	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Chromium	U		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Cobalt	0.00872	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Copper	0.0456	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Iron	6.90		2.00	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Lead	0.0164	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Manganese	0.0780		0.0500	-	1	9/19/2013	9/19/2013 04:40 PM
Molybdenum	0.0894		0.0500	-	1	9/19/2013	9/19/2013 04:40 PM
Nickel	0.0771		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Selenium	0.742		0.0500	-	1	9/19/2013	9/19/2013 04:40 PM
Silver	U		0.0500	-	1	9/19/2013	9/19/2013 04:40 PM
Uranium	U		0.0500	0	1	9/19/2013	9/19/2013 04:40 PM
Zinc	0.365		0.0500	0	1	9/19/2013	9/19/2013 04:40 PM
SEMIVOLATILES - SW8270D			SW8270		SW35	10	Analyst: ACN
1-Methylnaphthalene	370	JH		µg/L	10	9/13/2013	9/20/2013 03:06 PM
2-Methylnaphthalene	500	н	380		10	9/13/2013	9/20/2013 03:06 PM
Benzo(a)pyrene	U	н	380		10	9/13/2013	9/20/2013 03:06 PM
Chrysene	U	н	380		10	9/13/2013	9/20/2013 03:06 PM
Naphthalene	370	JH		μg/L	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2,4,6-Tribromophenol	69.0	J		%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2-Fluorobiphenyl	64.5	J		%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2-Fluorophenol	48.0	J		%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 4-Terphenyl-d14	81.8	-		%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: Nitrobenzene-d5	72.2	J		%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: Phenol-d6	63.4	J		%REC	10	9/13/2013	9/20/2013 03:06 PM
VOLATILES - SW8260C			SW8260				Analyst: PC
1,1,1-Trichloroethane	U	Н		mg/L	50		9/12/2013 04:02 PM
1,1,2,2-Tetrachloroethane	U	н		mg/L	50		9/12/2013 04:02 PM
1,1,2-Trichloroethane	U	н		mg/L	50		9/12/2013 04:02 PM
1,1-Dichloroethane	U	н		mg/L	50		9/12/2013 04:02 PM
1,1-Dichloroethene	U	Н		mg/L	50		9/12/2013 04:02 PM

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

#### Client: Navajo Refining Company

**Project:** WWTP Spill

Sample ID: API Excavation

Collection Date: 9/3/2013 04:58 PM

#### Work Order: 1309450 Lab ID: 1309450-01 Matrix: LIQUID

Analyses	Result	Qual	Report Limit U	Units	Dilution Factor	Date Prep	Date Analyzed
1,2-Dibromoethane	U	Н	0.25	mg/L	50		9/12/2013 04:02 PM
1,2-Dichloroethane	U	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Benzene	2.4	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Carbon tetrachloride	U	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Chloroform	U	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Ethylbenzene	2.4	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Methylene chloride	U	Н	0.50	mg/L	50		9/12/2013 04:02 PM
Tetrachloroethene	U	Н	0.25	mg/L	50		9/12/2013 04:02 PN
Toluene	3.8	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Trichloroethene	U	Н	0.25	mg/L	50		9/12/2013 04:02 PM
Vinyl chloride	U	Н	0.10	mg/L	50		9/12/2013 04:02 PM
Xylenes, Total	5.3	Н	0.75	mg/L	50		9/12/2013 04:02 PN
Surr: 1,2-Dichloroethane-d4	93.5		70-125	%REC	50		9/12/2013 04:02 PN
Surr: 4-Bromofluorobenzene	97.1		72-125	%REC	50		9/12/2013 04:02 PN
Surr: Dibromofluoromethane	96.7		71-125	%REC	50		9/12/2013 04:02 PN
Surr: Toluene-d8	93.1		75-125	%REC	50		9/12/2013 04:02 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: Client: Project:	1309450 Navajo Refining WWTP Spill	Company				DATES REPORT
Sample ID Clien	nt Sample ID	Matrix	<b>Collection Date</b>	TCLP Date	Prep Date	Analysis Date
<b>Batch ID</b> 73050	Test Name:	Semivolatiles - SW	/8270D			
1309450-01A API I	Excavation	Liquid	9/3/2013 4:58:00 PM		9/13/2013 09:15 AM	9/20/2013 03:06 PM
<b>Batch ID</b> 73162	Test Name:	Mercury-SW7470	<u>A</u>			
1309450-01A API I	Excavation	Liquid	9/3/2013 4:58:00 PM		9/18/2013 11:40 AM	9/18/2013 04:02 PM
<u>Batch ID</u> 73195	Test Name:	Metals				
1309450-01A API I	Excavation	Liquid	9/3/2013 4:58:00 PM		9/19/2013 10:00 AM	9/19/2013 04:40 PM
Batch ID R1536	57 Test Name:	Volatiles - SW826	<u>0C</u>			
1309450-01A API I	Excavation	Liquid	9/3/2013 4:58:00 PM			9/12/2013 04:02 PM

Client:	Navajo Refining Company
Work Order:	1309450
Project:	WWTP Spill

#### Date: 20-Nov-13

# QC BATCH REPORT

Batch ID: 7:	3162 Instrument ID HG	03		Metho	d: SW747	0					
MBLK	Sample ID: GBLKW1-091813-	73162				Units: <b>mg</b> /	۲L	Analys	is Date: 9/	/18/2013 0	3:41 PM
Client ID:		Ru	n ID: <b>HG0</b> 3	3_130918A		SeqNo: 3360508			Prep Date: 9/18/2013		
Analyte	F	Result	PQI	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		U	0.000200	)							
LCS	Sample ID: GLCSW1-091813-7	73162				Units: <b>mg</b> /	۲L	Analys	is Date: 9/	18/2013 0	3:42 PM
Client ID:		Ru	n ID: HG03	3_130918A		SeqNo: 336	0509	Prep Date: 9/18	8/2013	DF: 1	
Analyte	F	Result	PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0	0505	0.000200	0.005		0 101	85-115				
MS	Sample ID: 1309402-01DMS					Units: <b>mg</b> /	۲L	Analys	is Date: <b>9/</b>	18/2013 0	3:50 PM
Client ID:		Ru	n ID: HG03	3_130918A		SeqNo: 336	0512	Prep Date: 9/18	8/2013	DF: 1	
Analyte	F	Result	PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0	0511	0.000200	0.005	-0.00002	25 103	85-115				
MSD	Sample ID: 1309402-01DMSD					Units: <b>mg</b> /	۲L	Analys	is Date: <b>9/</b>	/18/2013 0	3:51 PM
Client ID:		Ru	n ID: HG03	3_130918A		SeqNo: 336	0513	Prep Date: 9/18	3/2013	DF: 1	
Analyte	F	Result	PQI	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0	0492	0.000200	0.005	-0.00002	25 98.9	85-115	0.00511	3.79	20	
DUP	Sample ID: 1309402-01DDUP					Units: <b>mg</b> /	۲L	Analys	is Date: 9/	18/2013 0	3:46 PM
Client ID:		Ru	n ID: <b>HG0</b> 3	3_130918A		SeqNo: 336	0511	Prep Date: 9/18	3/2013	DF: 1	
Analyte	F	Result	PQI	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		U	0.000200	)				-0.000025	0	20	
The followi	ing samples were analyzed in th	ie hatel	h. [	1309450-01A							

Batch ID: 73195

Instrument ID ICPMS05

Method: SW6020

MBLK	Sample ID: MBLKW3-091913-73195				Units: <b>mg/</b>	L	Analy	sis Date:	9/20/2013 1	2:08 PM
Client ID:	Rur	ID: ICPMS	05_1309204	<b>\</b>	SeqNo: 336:	3548	Prep Date: 9/1	9/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.0100								
Arsenic	U	0.00500								
Barium	U	0.00500								
Boron	U	0.0500								
Cadmium	U	0.00200								
Chromium	U	0.00500								
Cobalt	U	0.00500								
Copper	U	0.00500								
Iron	U	0.200								
Lead	U	0.00500								
Manganese	U	0.00500								
Molybdenum	U	0.00500								
Nickel	U	0.00500								
Selenium	U	0.00500								
Silver	U	0.00500								
Uranium	U	0.00500								
Zinc	U	0.00500								
LCS	Sample ID: MLCSW3-091913-73195				Units: mg/	L	Analy	sis Date:	9/19/2013 0	4:07 PM

#### LCS Sample ID: MLCSW3-091913-73195

LCS	Sample ID: MLCSW3-091913-73195		ι	Jnits: <b>mg/</b>	L	Analysis Date: 9/19/2013 04:07 PM					
Client ID:	Rur	ID: ICPMS	<b>\</b>	Se	qNo: <b>336</b> 2	2300	Prep Date: 9/1	9/2013	DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05273	0.00500	0.05		0	105	80-120				
Barium	0.05382	0.00500	0.05		0	108	80-120				
Boron	0.4791	0.0500	0.5		0	95.8	80-120				
Cadmium	0.05023	0.00200	0.05		0	100	80-120				
Chromium	0.05218	0.00500	0.05		0	104	80-120				
Cobalt	0.0522	0.00500	0.05		0	104	80-120				
Copper	0.05123	0.00500	0.05		0	102	80-120				
Iron	5.33	0.200	5		0	107	80-120				
Lead	0.05107	0.00500	0.05		0	102	80-120				
Manganese	0.05274	0.00500	0.05		0	105	80-120				
Molybdenum	0.04933	0.00500	0.05		0	98.7	80-120				
Nickel	0.0511	0.00500	0.05		0	102	80-120				
Selenium	0.05262	0.00500	0.05		0	105	80-120				
Silver	0.05091	0.00500	0.05		0	102	80-120				
Uranium	0.09508	0.00500	0.1		0	95.1	80-120				
Zinc	0.05587	0.00500	0.05		0	112	80-120				

Note: See Qualifiers Page for a list of Qualifiers and their explanation. Client:Navajo Refining CompanyWork Order:1309450

WWTP Spill

## **QC BATCH REPORT**

Batch ID: 73195

**Project:** 

Instrument ID ICPMS05

LCS	Sample ID: MLCSW3-091913-73195					its: <b>mg/</b> I	_	Analysis Date: 9/20/2013 12:10 PM			
Client ID:	R	un ID: ICPMS	05_1309204	4	SeqN	No: <b>336</b> 3	8549	Prep Date: 9/1	9/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	ç	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1065	0.0100	0.1		0	107	80-120				

MS	Sample ID: 1309616-01DMS				Units: <b>mg/</b>	L	Analysis [	Date:	9/19/2013 04	4:21 PM
Client ID:	Run	ID: ICPMS	05_130919A	Se	eqNo: <b>336</b>	2305	Prep Date: 9/19/20	013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	6RPD	RPD Limit	Qual
Aluminum	2.837	0.0100	0.1	2.969	-132	80-120				SEO
Arsenic	0.05759	0.00500	0.05	0.00563	104	80-120				
Barium	0.1532	0.00500	0.05	0.1134	79.6	80-120				S
Boron	1.091	0.0500	0.5	0.6631	85.6	80-120				
Cadmium	0.0527	0.00200	0.05	0.000053	105	80-120				
Chromium	0.06385	0.00500	0.05	0.01307	102	80-120				
Cobalt	0.05086	0.00500	0.05	0.001394	98.9	80-120				
Copper	0.05476	0.00500	0.05	0.005046	99.4	80-120				
Iron	29.93	0.200	5	26.15	75.6	80-120				SO
Lead	0.0539	0.00500	0.05	0.002549	103	80-120				
Manganese	0.2507	0.00500	0.05	0.211	79.5	80-120				SO
Molybdenum	0.05565	0.00500	0.05	0.00842	94.5	80-120				
Nickel	0.05403	0.00500	0.05	0.004901	98.3	80-120				
Selenium	0.0584	0.00500	0.05	0.005257	106	80-120				
Silver	0.04873	0.00500	0.05	0.00001	97.4	80-120				
Uranium	0.1061	0.00500	0.1	0.008033	98.1	80-120				
Zinc	0.08035	0.00500	0.05	0.02509	111	80-120				

Batch ID: 73195

Instrument ID ICPMS05

Method: SW6020

MSD Sample ID: 1	309616-01DMSD			ι	Jnits: <b>mg/</b>	L	Analysi	s Date: 9/	19/2013 0	4:23 PN
Client ID:	Run	ID: ICPMS	05_130919A	Se	qNo: <b>336</b> 2	2306	Prep Date: 9/19	/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.716	0.0100	0.1	2.969	-253	80-120	2.837	4.37	15	SEO
Arsenic	0.05978	0.00500	0.05	0.00563	108	80-120	0.05759	3.73	15	
Barium	0.1575	0.00500	0.05	0.1134	88.3	80-120	0.1532	2.79	15	
Boron	1.103	0.0500	0.5	0.6631	87.9	80-120	1.091	1.06	15	
Cadmium	0.05355	0.00200	0.05	0.000053	107	80-120	0.0527	1.6	15	
Chromium	0.06485	0.00500	0.05	0.01307	104	80-120	0.06385	1.55	15	
Cobalt	0.05328	0.00500	0.05	0.001394	104	80-120	0.05086	4.64	15	
Copper	0.05661	0.00500	0.05	0.005046	103	80-120	0.05476	3.32	15	
ron	30.81	0.200	5	26.15	93.3	80-120	29.93	2.91	15	0
Lead	0.05453	0.00500	0.05	0.002549	104	80-120	0.0539	1.15	15	
Manganese	0.2572	0.00500	0.05	0.211	92.5	80-120	0.2507	2.56	15	0
Molybdenum	0.05767	0.00500	0.05	0.00842	98.5	80-120	0.05565	3.56	15	
Nickel	0.05706	0.00500	0.05	0.004901	104	80-120	0.05403	5.45	15	
Selenium	0.0605	0.00500	0.05	0.005257	110	80-120	0.0584	3.53	15	
Silver	0.04981	0.00500	0.05	0.00001	99.6	80-120	0.04873	2.19	15	
Jranium	0.1081	0.00500	0.1	0.008033	100	80-120	0.1061	1.89	15	
- annunn	0.1001	0.00000								
	0.07989	0.00500	0.05	0.02509	110	80-120	0.08035	0.578	15	
Zinc				0.02509	110 Jnits: <b>mg/</b>			0.578 s Date: <b>9/</b>		4:18 PI
Zinc DUP Sample ID: 1	0.07989 309616-01DDUP	0.00500		0.02509 L		L		s Date: <b>9/</b>		4:18 PI
Zinc DUP Sample ID: 1	0.07989 309616-01DDUP	0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b>	L	Analysi Prep Date: <b>9/19</b> RPD Ref	s Date: <b>9/</b>	19/2013 0 DF: 1 RPD	4:18 PI
Zinc DUP Sample ID: 1 Client ID:	0.07989 309616-01DDUP	0.00500	0.05 05_130919A	0.02509 L Se	Jnits: <b>mg/</b>	L 2304	Analysi Prep Date: <b>9/19</b>	s Date: <b>9/</b>	19/2013 0 DF: 1	<b>4:18 Pl</b> Qual
Zinc DUP Sample ID: 1 Client ID: Analyte	0.07989 <b>309616-01DDUP</b> Run	0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref	s Date: <b>9/</b> /2013	19/2013 0 DF: 1 RPD	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic	0.07989 309616-01DDUP Run Result	0.00500 ID: ICPMS0 PQL	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value	s Date: <b>9/</b> <b>/2013</b> %RPD	19/2013 0 DF: 1 RPD Limit	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium	0.07989 309616-01DDUP Run Result 0.006299	0.00500 ID: ICPMS( PQL 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563	s Date: <b>9/</b> / <b>2013</b> %RPD 11.2	19/2013 0 DF: 1 RPD Limit 25 25	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron	0.07989 309616-01DDUP Run <u>Result</u> 0.006299 0.1128	0.00500 D: ICPMS( PQL 0.00500 0.00500 0.0500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134	s Date: <b>9/</b> / <b>2013</b> %RPD 11.2 0.471	19/2013 0 DF: 1 RPD Limit 25 25 25	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U	0.00500 D: ICPMS0 PQL 0.00500 0.00500 0.0500 0.00200	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053	s Date: <b>9/</b> / <b>2013</b> %RPD 11.2 0.471 1.43 0	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436	0.00500 D: ICPMS0 PQL 0.00500 0.00500 0.00200 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Cobalt	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25	
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Cobalt Copper	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703 0.005504	0.00500 PQL 0.00500 0.00500 0.00500 0.00200 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Cobalt Copper ron	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.200	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Cobalt Copper ron Lead	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703 0.005504 28.46 0.002397	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.200 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Chromium Cobalt Copper ron Lead Manganese	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001436 0.001703 0.005504 28.46 0.002397 0.2288	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549 0.211	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0 8.48 0 8.11	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Chromium Cobalt Copper ron Lead Manganese Molybdenum	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703 0.005504 28.46 0.002397 0.2288 0.009001	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549 0.211 0.00842	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0 8.48 0 8.11 6.67	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qual
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Cobalt Copper ron Lead Manganese Molybdenum Vickel	0.07989 309616-01DDUP Run 20006299 0.1128 0.6726 U 0.011436 0.001703 0.005504 28.46 0.002397 0.2288 0.009001 0.005295	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: 9/19 RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549 0.211 0.00842 0.004901	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0 8.11 6.67 7.73	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qua
Zinc DUP Sample ID: 1 Client ID: Analyte Arsenic Barium Boron Cadmium Chromium Chromium Cobalt Copper ron Lead Manganese Molybdenum Nickel Selenium	0.07989 309616-01DDUP Run 0.006299 0.1128 0.6726 U 0.01436 0.001703 0.005504 28.46 0.002397 0.2288 0.009001 0.005295 0.006381	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: <b>9/19</b> RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549 0.211 0.00842 0.004901 0.005257	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0 8.11 6.67 7.73 19.3	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qua
Zinc	0.07989 309616-01DDUP Run 20006299 0.1128 0.6726 U 0.011436 0.001703 0.005504 28.46 0.002397 0.2288 0.009001 0.005295	0.00500 PQL 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500 0.00500	0.05 05_130919A	0.02509 L Se SPK Ref	Jnits: <b>mg/</b> qNo: <b>336</b> 2	L 2304 Control	Analysi Prep Date: 9/19 RPD Ref Value 0.00563 0.1134 0.6631 0.000053 0.01307 0.001394 0.005046 26.15 0.002549 0.211 0.00842 0.004901	s Date: 9/ /2013 %RPD 11.2 0.471 1.43 0 9.42 0 8.68 8.48 0 8.11 6.67 7.73	19/2013 0 DF: 1 RPD Limit 25 25 25 25 25 25 25 25 25 25 25 25 25	Qual

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Work Ord Project:	Navajo Refining Company er: 1309450 WWTP Spill			QC BATC	H REPORT
Batch ID: 73	195 Instrument ID ICPMS05	Method: SW	6020		
DUP	Sample ID: 1309616-01DDUP		Units: mg/L	Analysis Date: 9/	/20/2013 12:15 PM
Client ID:	Run I	D: ICPMS05_130920A	SeqNo: 3363551	Prep Date: 9/19/2013	DF: <b>10</b>
Analyte	Result	SPK F PQL SPK Val ^{Valu}		I RPD Ref Value %RPD	RPD Limit Qual
Aluminum	2.192	0.100		2.31 5.24	25
The following	ng samples were analyzed in this batch:	1309450-01A			

Batch ID: 73050

Instrument ID SV-3

MBLK Sample ID: SBLKW1-	130913-73050			Units: µg/L			Analy	sis Date:	9/16/2013 0	6:21 PM
Client ID:	Run II	Run ID: SV-3_130916B			SeqNo: <b>335</b>	8240	Prep Date: 9/1	3/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	5.0								
2-Methylnaphthalene	U	5.0								
Benzo(a)pyrene	U	5.0								
Chrysene	U	5.0								
Naphthalene	U	5.0								
Surr: 2,4,6-Tribromophenol	93.53	5.0	100	0	93.5	42-124		0		
Surr: 2-Fluorobiphenyl	77.17	5.0	100	0	) 77.2	48-120		0		
Surr: 2-Fluorophenol	67.1	5.0	100	0	67.1	20-120		0		
Surr: 4-Terphenyl-d14	87.53	5.0	100	0	87.5	51-135		0		
Surr: Nitrobenzene-d5	71.14	5.0	100	0	71.1	41-120		0		
Surr: Phenol-d6	69.12	5.0	100	0	69.1	20-120		0		

LCS Sample ID: SLCSW1-1	30913-73050				Jnits: µg/l	-	Analy	sis Date:	9/16/2013 0	5:35 PM
Client ID:	Run IE	D: SV-3_1	30916B	Se	eqNo: <b>335</b>	8239	Prep Date: 9/1	3/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	41.26	5.0	50	0	82.5	55-120				
2-Methylnaphthalene	42.44	5.0	50	0	84.9	55-120				
Benzo(a)pyrene	40.43	5.0	50	0	80.9	55-120				
Chrysene	41.67	5.0	50	0	83.3	55-120				
Naphthalene	39.6	5.0	50	0	79.2	55-120				
Surr: 2,4,6-Tribromophenol	79.62	5.0	100	0	79.6	42-124		0		
Surr: 2-Fluorobiphenyl	69.61	5.0	100	0	69.6	48-120		0		
Surr: 2-Fluorophenol	98.92	5.0	100	0	98.9	20-120		0		
Surr: 4-Terphenyl-d14	89.45	5.0	100	0	89.4	51-135		0		
Surr: Nitrobenzene-d5	69.5	5.0	100	0	69.5	41-120		0		
Surr: Phenol-d6	83.36	5.0	100	0	83.4	20-120		0		

Batch ID: 73050

Instrument ID SV-3

Method: SW8270

LCSD Sample ID: SLCSDW1	1-130913-73050				Units: µg/l	-	Analysi	s Date: 9/	9/17/2013 11:47 AM		
Client ID:	Run II	D: SV-3_1	30916B	Se	eqNo: <b>335</b>	8244	Prep Date: 9/13	/2013	DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1-Methylnaphthalene	38.91	5.0	50	0	77.8	55-120	41.26	5.86	20		
2-Methylnaphthalene	41.44	5.0	50	0	82.9	55-120	42.44	2.39	20		
Benzo(a)pyrene	41.04	5.0	50	0	82.1	55-120	40.43	1.51	20		
Chrysene	41.56	5.0	50	0	83.1	55-120	41.67	0.283	20		
Naphthalene	39.98	5.0	50	0	80	55-120	39.6	0.95	20		
Surr: 2,4,6-Tribromophenol	87.43	5.0	100	0	87.4	42-124	79.62	9.35	20		
Surr: 2-Fluorobiphenyl	73.19	5.0	100	0	73.2	48-120	69.61	5.01	20		
Surr: 2-Fluorophenol	75.18	5.0	100	0	75.2	20-120	98.92	27.3	20	R	
Surr: 4-Terphenyl-d14	77.31	5.0	100	0	77.3	51-135	89.45	14.6	20		
Surr: Nitrobenzene-d5	76.3	5.0	100	0	76.3	41-120	69.5	9.32	20		
Surr: Phenol-d6	66.91	5.0	100	0	66.9	20-120	83.36	21.9	20	R	

Batch ID: R153657

Instrument ID VOA1

MBLK Sample ID: VBLKW-13	0912-R153657				Units: <b>µg/</b>	L	Analy	sis Date: 9	/12/2013 0	02:46 PM
Client ID:	Run II	D: VOA1_	130912A		SeqNo: 335	4011	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane-d4	49	5.0	50		0 98	70-125	i	0		
Surr: 4-Bromofluorobenzene	51.26	5.0	50		0 103	72-125	i	0		
Surr: Dibromofluoromethane	47.84	5.0	50		0 95.7	71-125	i	0		
Surr: Toluene-d8	45.14	5.0	50		0 90.3	75-125	<b>j</b>	0		

Batch ID: **R153657** 

Instrument ID VOA1

LCS Sample ID: VLCSW-13	0912-R153657				Units: µg/L Ar			Analysis Date: 9/12/2013 01:14 PM			
Client ID:	Run I	D: VOA1_	130912A	S	eqNo: <b>335</b>	4010	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	51.59	5.0	50	0	103	80-120					
1,1,2,2-Tetrachloroethane	43.8	5.0	50	0	87.6	72-120					
1,1,2-Trichloroethane	48.85	5.0	50	0	97.7	80-120					
1,1-Dichloroethane	55.72	5.0	50	0	111	76-120					
1,1-Dichloroethene	57.77	5.0	50	0	116	73-124					
1,2-Dibromoethane	49.91	5.0	50	0	99.8	80-120					
1,2-Dichloroethane	52.43	5.0	50	0	105	78-120					
Benzene	54.11	5.0	50	0	108	73-121					
Carbon tetrachloride	48.43	5.0	50	0	96.9	75-125					
Chloroform	52.59	5.0	50	0	105	70-130					
Ethylbenzene	48.86	5.0	50	0	97.7	80-120					
Methylene chloride	51.52	10	50	0	103	65-133					
Tetrachloroethene	47.65	5.0	50	0	95.3	79-120					
Toluene	47.62	5.0	50	0	95.2	80-120					
Trichloroethene	53.45	5.0	50	0	107	80-120					
Vinyl chloride	60.26	2.0	50	0	121	70-127					
Xylenes, Total	149.3	15	150	0	99.6	80-120					
Surr: 1,2-Dichloroethane-d4	48.87	5.0	50	0	97.7	70-125	1	0			
Surr: 4-Bromofluorobenzene	52.18	5.0	50	0	104	72-125		0			
Surr: Dibromofluoromethane	50.3	5.0	50	0	101	71-125		0			
Surr: Toluene-d8	47.56	5.0	50	0	95.1	75-125	1	0			

Batch ID: R153657

Instrument ID VOA1

MS Sample ID: 1309436-05A	MS				Units: µg/l	-	Analysis Date: 9/12/2013 04:28 I			
Client ID:	Run I	D: VOA1_	130912A	S	eqNo: <b>335</b>	4015	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.54	5.0	50	0	95.1	80-120				
1,1,2,2-Tetrachloroethane	52.72	5.0	50	0	105	72-120				
1,1,2-Trichloroethane	51.89	5.0	50	0	104	80-120				
1,1-Dichloroethane	53	5.0	50	0	106	76-120				
1,1-Dichloroethene	48.61	5.0	50	0	97.2	73-124				
1,2-Dibromoethane	51.94	5.0	50	0	104	80-120				
1,2-Dichloroethane	48.5	5.0	50	0	97	78-120				
Benzene	44.39	5.0	50	0	88.8	73-121				
Carbon tetrachloride	44.48	5.0	50	0	89	75-125				
Chloroform	50.02	5.0	50	0	100	70-130				
Ethylbenzene	46.39	5.0	50	0	92.8	80-120				
Methylene chloride	50.26	10	50	0	101	65-133				
Tetrachloroethene	41.87	5.0	50	0	83.7	79-120				
Toluene	46.75	5.0	50	0	93.5	80-120				
Trichloroethene	45.58	5.0	50	0	91.2	80-120				
Vinyl chloride	40.53	2.0	50	0	81.1	70-127				
Xylenes, Total	145.5	15	150	0	97	80-120				
Surr: 1,2-Dichloroethane-d4	48.39	5.0	50	0	96.8	70-125		0		
Surr: 4-Bromofluorobenzene	51.28	5.0	50	0	103	72-125		0		
Surr: Dibromofluoromethane	50.54	5.0	50	0	101	71-125		0		
Surr: Toluene-d8	50.23	5.0	50	0	100	75-125		0		

Batch ID: R153657

Instrument ID VOA1

Method: SW8260

MSD Sample ID: 1309436-09	5AMSD				Units: µg/L	-	Analysis Date: 9/12/2013 04			
Client ID:	Run II	D: VOA1_	130912A	S	eqNo: <b>335</b> 4	4016	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.16	5.0	50	0	94.3	80-120	47.54	0.797	20	
1,1,2,2-Tetrachloroethane	50.78	5.0	50	0	102	72-120	52.72	3.75	20	
1,1,2-Trichloroethane	50.25	5.0	50	0	100	80-120	51.89	3.22	20	
1,1-Dichloroethane	52.51	5.0	50	0	105	76-120	53	0.937	20	
1,1-Dichloroethene	51.28	5.0	50	0	103	73-124	48.61	5.35	20	
1,2-Dibromoethane	50.19	5.0	50	0	100	80-120	51.94	3.42	20	
1,2-Dichloroethane	49.25	5.0	50	0	98.5	78-120	48.5	1.55	20	
Benzene	47.99	5.0	50	0	96	73-121	44.39	7.78	20	
Carbon tetrachloride	48.08	5.0	50	0	96.2	75-125	44.48	7.79	20	
Chloroform	49.8	5.0	50	0	99.6	70-130	50.02	0.454	20	
Ethylbenzene	43.63	5.0	50	0	87.3	80-120	46.39	6.13	20	
Methylene chloride	50.01	10	50	0	100	65-133	50.26	0.49	20	
Tetrachloroethene	45.56	5.0	50	0	91.1	79-120	41.87	8.44	20	
Toluene	48.55	5.0	50	0	97.1	80-120	46.75	3.78	20	
Trichloroethene	48.97	5.0	50	0	97.9	80-120	45.58	7.17	20	
Vinyl chloride	48.68	2.0	50	0	97.4	70-127	40.53	18.3	20	
Xylenes, Total	147.3	15	150	0	98.2	78-121	145.5	1.2	20	
Surr: 1,2-Dichloroethane-d4	48.01	5.0	50	0	96	70-125	48.39	0.789	20	
Surr: 4-Bromofluorobenzene	49.03	5.0	50	0	98.1	72-125	51.28	4.49	20	
Surr: Dibromofluoromethane	48.77	5.0	50	0	97.5	71-125	50.54	3.57	20	
Surr: Toluene-d8	47.38	5.0	50	0	94.8	75-125	50.23	5.84	20	

The following samples were analyzed in this batch:

1309450-01A

#### Date: 20-Nov-13

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## **ALS Environmental**

_

Client:	Navajo Refining Company	<b>OUALIFIERS</b> ,
Project:	WWTP Spill	
WorkOrder:	1309450	ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
а	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
Е	Value above quantitation range
Н	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
Μ	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
0	Sample amount is $> 4$ times amount spiked
Р	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program
Units Reported	Description
μg/L	Micrograms per Liter
mg/L	Milligrams per Liter

Sample	Receipt	Checklist
--------	---------	-----------

Client Name:	<u>NAVAJ</u>	<u>O REFINING</u>				Date/Time	Receiv	ed: <u>11-</u>	Sep-13	<u>8 09:30</u>		
Work Order:	<u>130945</u>	<u>0</u>				Received b	<u> </u>					
Checklist comp	leted by Liquic	Parusk M. Giga eSignature		12-Sep-13 Date	<u>}</u>	Reviewed by:		ia West nature				13-Sep-13 Date
Carrier name:	<u>FedE</u>	-										
Shipping contai	ner/coole	er in good condition?		Yes	✓	No 🗌	N	ot Present				
Custody seals in	ntact on	shipping container/coole	r?	Yes	✓	No 🗌	N	ot Present				
Custody seals in	ntact on	sample bottles?		Yes		No	N	ot Present	$\checkmark$			
Chain of custod	ly preser	nt?		Yes	$\checkmark$	No 🗌						
Chain of custod	ly signed	when relinquished and	received?	Yes	✓	No 🗌						
Chain of custod	ly agrees	s with sample labels?		Yes	$\checkmark$	No 🗌						
Samples in prop	per conta	ainer/bottle?		Yes		No 🗹						
Sample contain	ers intac	pt?		Yes	✓	No 🗌						
Sufficient samp	le volum	e for indicated test?		Yes	✓	No 🗌						
All samples rec	eived wit	thin holding time?		Yes		No 🗹						
Container/Temp	o Blank t	emperature in complianc	e?	Yes	✓	No 🗌						
Temperature(s)	/Thermo	meter(s):		1.0c/1.	0c C/	<u>/U</u>		<u>IR1</u>				
Cooler(s)/Kit(s):	:			2988								
Date/Time sam	ple(s) se	ent to storage:		9/12/1	3 09:′	17						
Water - VOA via	als have	zero headspace?		Yes		No	No VC	0A vials sub	mitted	$\checkmark$		
Water - pH acce	eptable u	upon receipt?		Yes	✓	No 🗌	N/A					
pH adjusted? pH adjusted by:				Yes		No 🗌	N/A	$\checkmark$				
Login Notes:	Sar	nple received in 1 Liter V					rved - v	olatiles and	semiv	olatiles	have 7	
	<u>day</u>	holding time; sample ree	ceived outside of	f holding tim	<u>ne. Js</u>	<u>b.</u>						
								===				
Client Contacte	d:		Date Contacted	:		Person	Conta	cted:				
Contacted By:			Regarding:									
Comments:												
CorrectiveAction	n:									S	RC Pa	age 1 of 1



No.

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ALS Laboratory Group 5 10450 Staneliff Rd. #210 Houston, Texas 77099 (Tel) 281.530.5656 (Fax) 281.530.5887

### **Chain of Custody Form**

Page 1 of _



NAVAJO REFINING: Navajo Refining Company

Project: WWTP Spill

ALS Project Manager: Sonia West Customer Information Project Information Parameter/Method Request for Analysis Purchase Order Project Name WWTP Spill A Volitiles (Totals) B Semi-Volitiles (Totals) Work Order **Project Number** Company Name Navajo Refining Company Bill To Company Navajo Refining Company C Metals (Totals) Send Report To Robert Combs Invoice Attn. Aaron Strange D Е Address P. O. Box 159 Address 501 East Main F G City/State/Zip Artesia, New Mexico 88211-0159 City/State/Zip Artesia, New Mexico 88210 н Phone (575) 748-3311 Phone (575) 748-3311 Fax (575) 746-5451 Fax (575) 746-5451 1 e-Mail Address Aaron.Strange@hollyfrontier.com e-Mail Address Aaron Strange@hollyfrontier.com Ĵ Sample Description B С D Ē F G ΗĽ Date Time Matrix # Bottles A 1 Hold Pres. 11 API Excavation 9/3/13 16:58 Liquid Х Х Х None 1 **Temperature Blank** 1 Liquid Sampler(s): Please Print & Sign Shipment Method: Required Turnaround Time: **Results Due Date:** Other_ Aaron Strange STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour FedEx Relinguished by: Received by: Notes: Time: Date: 9/3/2013 16:15 min Relinquished by: Received by (Laboratory): 9/11/13 Tima; UZD QC Package: (Check Box Below) Cooler Temp Level II: Standard OC TRRP-Checklist Logged by (Laboratory): Date: Time: Checked by (Laboratory) Level III: Std QC + Raw Data TRRP Level IV Level IV: SW846 CLP-Like Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035 Other: _

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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CUSTODY SEAL	Seal Browner:
ate: $\frac{g}{g}$	C. Marken
:ompany: Navaja Refining Ca	

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N



06-Nov-2013

Aaron Strange Navajo Refining Company PO Box 1490 Artesia, NM 88211-1490

Tel: (575) 748-6733 Fax: (575) 746-5421

Re: Wastewater Spill-Artesia

Work Order: 1311143

Dear Aaron,

ALS Environmental received 1 sample on 25-Sep-2013 09:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 20.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Sonia West

Electronically approved by: Dayna.Fisher

Sonia West Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887 ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

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Excavation

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Client: Project: Work Order:	Navajo Refining Company Wastewater Spill-Artesia 1311143		Work Order Sample Summary					
	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	Collection Date	Date Received Hold			
1311143-01 V	Vastewater Spill at Lift Station	Solid	13091139	9/24/2013 14:07	9/25/2013 09:25			

SS	Page	1	of	1
----	------	---	----	---

2 of 20

Date: 06-Nov-13

Client:	Navajo Refining Company	
Project:	Wastewater Spill-Artesia	Case Narrative
Work Order:	1311143	

This report contains additional analyses per your request on November 4, 2013 via email. The laboratory analyzed your sample Wastewater Spill at Lift Station Excavation for RCI. The sample was originally reported as ALS Workorder Number 13091139.

The analyses for Reactive Cyanide and Reactive Sulfide were subcontracted to ALS Environmental in Holland, MI.

Client: Navajo Refining Company

Project: Wastewater Spill-Artesia

Sample ID: Wastewater Spill at Lift Station Excavation

Collection Date: 9/24/2013 02:07 PM

Work Order: 1311143 Lab ID: 1311143-01 Matrix: SOLID

Analyses	Result	Qual	Report Limit U	nits	Dilution Factor	Date Analyzed
REACTIVE CYANIDE			SW-846			Analyst: <b>HN</b>
Reactive Cyanide	U	Н	0.100	mg/Kg	1	11/6/2013
REACTIVE SULFIDE			SW-846			Analyst: HN
Reactive Sulfide	242	н	40.0	mg/Kg	1	11/5/2013 02:00 PM
GNITABILITY			SW1030			Analyst: KAH
Ignitability, Solid	Negative	Н		Burn Rate mm/sec	, 1	11/5/2013 04:20 PM
PH - SOIL - SW9045D			SW9045B			Analyst: KL
рН	7.61	н	0.100	pH Units	1	11/5/2013 01:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: Client: Project:	1311143 Navajo Refining Com Wastewater Spill-Arte					DATES REPORT
Sample ID Client	t Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R15664	6 <b>Test Name:</b> Ignita	ability_				
	water Spill at Lift n Excavation	Solid	9/24/2013 2:07:00 PM			11/5/2013 04:20 PM
Batch ID <u>R15665</u>	58 <b><u>Test Name:</u></b> <u>pH -</u>	Soil - SW9045	5 <u>D</u>			
	water Spill at Lift n Excavation	Solid	9/24/2013 2:07:00 PM			11/5/2013 01:00 PM
<u>Batch ID</u> <u>R15668</u>	<u>30 Test Name: React</u>	tive Cyanide				
	water Spill at Lift n Excavation	Solid	9/24/2013 2:07:00 PM			11/6/2013
Statio	n Excavation					11/5/2013 02:00 PM

Date:	06-Nov-13

OC	<b>BA</b> ′	ГСН	REP	ORT
γv	DA			UNI

**Client:** Navajo Refining Company Work Order: 1311143 **Project:** Wastewater Spill-Artesia Batch ID. R156646 Instrument ID WetChem

Batch ID: R1	56646 Ins	trument ID WetChem		Method	: SW103	0	(Dissolve	e)			
DUP	Sample ID: 1311	030-01ADUP				Units: <b>Bur</b> i	n Rate, n	nm/se Ana	alysis Date:	11/5/2013 0	04:20 PM
Client ID:		Run I	D: WETCI	HEM_13110	5E	SeqNo: 342	1081	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability, S	olid	U	0						0	0 25	
The followin	ng samples were a	nalyzed in this batch:	1:	311143-01A							

Client:Navajo Refining CompanyWork Order:1311143Project:Wastewater Spill-Artesia

## QC BATCH REPORT

Batch ID: R	R156658 Ins	trument ID WetChem		Method	: SW904	5B	(	Dissolve	)			
LCS	Sample ID: WLC	SS1-131105-R156658				Units:	pH U	Inits	Analys	is Date: 11	/5/2013 0	1:00 PM
Client ID:		Run II	D: WETCH	IEM_13110	5H	SeqNo:	34214	408	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
рН		6.01	0.100	6		0 1	100	98-102				
DUP	Sample ID: 1311	030-01ADUP				Units:	pH U	Inits	Analys	is Date: 11	/5/2013 0	1:00 PM
Client ID:		Run II	D: WETCH	IEM_13110	5H	SeqNo:	34214	419	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Analyte pH		Result 5.45	PQL 0.100	SPK Val		%R						Qual H

Client: Project: WorkOrder:	Navajo Refining Company Wastewater Spill-Artesia 1311143	QUALIFIERS, ACRONYMS, UNITS
Qualifier	Description	
*	Value exceeds Regulatory Limit	
а	Not accredited	
В	Analyte detected in the associated Method Blank above the Rep	porting Limit
Е	Value above quantitation range	
Н	Analyzed outside of Holding Time	
J	Analyte detected below quantitation limit	
М	Manually integrated, see raw data for justification	
n	Not offered for accreditation	
ND	Not Detected at the Reporting Limit	
0	Sample amount is $> 4$ times amount spiked	
Р	Dual Column results percent difference > 40%	
R	RPD above laboratory control limit	
S	Spike Recovery outside laboratory control limits	
U	Analyzed but not detected above the MDL	
Acronym	Description	
DCS	Detectability Check Study	
DUP	Method Duplicate	
LCS	Laboratory Control Sample	
LCSD	Laboratory Control Sample Duplicate	
MBLK	Method Blank	
MDL	Method Detection Limit	
MQL	Method Quantitation Limit	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	
PDS	Post Digestion Spike	
PQL	Practical Quantitation Limit	
SD	Serial Dilution	
SDL	Sample Detection Limit	
TRRP	Texas Risk Reduction Program	
Units Reported	l Description	
Burn Rate,	mm/sec	
mg/K	g Milligrams per Kilogram	

pH Units

#### Sample Receipt Checklist

Client Name: NAVAJO REFINING		Date/Time Received:	25-Sep-13	<u>3 09:25</u>
Work Order: <u>13091139</u>		Received by:	<u>WTJ</u>	
Checklist completed by Paresh M. Giga eSignature	25-Sep-13 Re	eviewed by: eSignature		Date
Matrices:SolidCarrier name:FedEx				
Shipping container/cooler in good condition?	Yes 🗹	No 🗌 Not Pr	esent	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌 Not Pr	esent	
Custody seals intact on sample bottles?	Yes	No 🗌 Not Pr	esent 🗹	
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗌		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🗹	No 🗌		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🔽	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗌		
Container/Temp Blank temperature in compliance?	Yes 🗹	No 🗌		
Temperature(s)/Thermometer(s):	<u>3.3c/3.3c C/U</u>		R1	
Cooler(s)/Kit(s):	<u>5119</u>			
Date/Time sample(s) sent to storage:	9/25/13 16:10			
Water - VOA vials have zero headspace?	Yes	No 🗌 No VOA vi	als submitted	$\checkmark$
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌 N/A 🗹		
pH adjusted? pH adjusted by:	Yes 🗌	No 🗌 N/A 🗹		

Login Notes:

Client Contacted:	Date Contacted:	Person Contacted:
Contacted By:	Regarding:	
Comments:		
CorrectiveAction:		
		SF

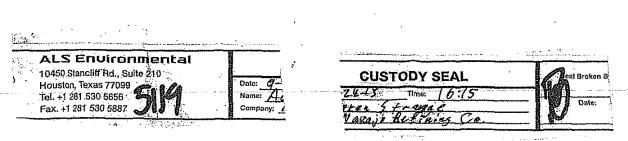
_____

ALS	<ul> <li>ALS Laboratory Group 10450 Stancliff Rd, #210</li> <li>Houston, Texas 77099 (Tel) 281.530.5656</li> <li>(Fax) 281.530.5887</li> </ul>		·	ain of		ody Fo	orn		4VA	Proje	EFIN ect: V	ING:   Vastev	Vavaj vater	o Refi Spill-A	ning ( Artesia	·	any
			ALS Project M	Aanager: So	onia West			•									
Custo	omer Information		Project Ir	formation	1			-	•	11351	S [   1839			21641832	1111 [89]		
Purchase Order		Project Na	meWastewa	ater Spili - A	Artesia		A	TCLP Vo	atiles		_						
Work Order		Project Num	ber				в	TCLP Sei	ni-Voia	atiles						1	
Company Name N	lavajo Refining Company	Bill To Comp	any Navajo F	lefining Co	mpany		c	TCLP Me	tals					······			
Send Report To A	aron Strange	Invoice A	ttn. Aaron Si	trange			D										
Address P	2. O. Box 159	Addr	ess 501 East	: Main			E F								·····		
City/State/Zip A	rtesia, New Mexico 88211-0159	City/State	Zip Artesia,	New Mexico	88210	······	G								·		
Phone (5	575) 748-3311	Ph	one (575) 748	1-3311			H								······		
Fax (5	575) 746-5451			$\frac{1}{1}$					·····								
e-Mail Address A			ess A.Strang													P	
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles		в	C		E	F	G	H	1.1	Ti	Hold
I	I Lift Station Excavation	9/24/13	14:07	Solid	Chill	1	x		x	<u> </u>	<u> </u>	1	1	1		1	+
2									<u> </u>	<u> </u>		<u> </u>	<u> </u>	+		+	<u> </u>
3	······································			-	1	1			<u>†</u>	<u> </u>				1		1	+
4			<u></u>		1				1		1	1	1	1	1	1	1
.5											1	1		1		1	1
6														1	1		1
7					<u> </u>									1	1	<u> </u>	1
8					ļ	<u> </u>											T
9			····	-	ļ		ļ										
10				<u> </u>	<u> </u>						<u> </u>			<u> </u>			
Sampler(s): Please Prin Glen Rhodes	Jen Phodee	Fede	nt Method: ral Expres		quired Tu 5TD 10 W	naround T	] 5 V	Yk Days		🔲 Othe Vk Days		24 Hour	Re	sults Di			28
Relinquished by:	Plades 9/24/13	1500	lecolved by:					lotes:	TANKI CAR -								
Rolinquished by:	9/24/13	16:15	locoived by Lab		alart	13 09	art.	Cooler Te	np. 🖵			teck Bo Standar		w)		RP-Che	ocklist
Logged by (Laboratory):	Date:	Time: paratras () (	hocked by (Lab	fratory):	11-51	(SERVICE)		anna an an a' suite Chuire an Aistean a' suite Chuire an Aistean an Ai	12122 01222	Le	vel III:	Std QC	+ Rav			RP Leve	
								3-3		Le	vel IV;	SW84(	5 CLP-	Like			
Preservative Key: 1-	HCL 2-HNO3 3-H2SO4 4-Na	OH 5-Na2S2O3	6-NaHSO	4 7-Othe	r 8-4 d	egrees C	9-5	i035 - J		Ot	her: _		_				

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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## ALS Group USA, Corp

Date: 06-Nov-13

Client: Project: Work Order:	ALS Environmental 1311143 <b>1311181</b>			Work Order S	Sample Summary
	<u>Client Sample ID</u> 311143-01B	<u>Matrix</u> Solid	<u>Tag Number</u>	<u>Collection Date</u> 9/24/2013 14:07	Date Received         Hold           11/5/2013 09:30         □

## ALS Group USA, Corp

 Client:
 ALS Environmental

 Project:
 1311143

 WorkOrder:
 1311181

## QUALIFIERS, ACRONYMS, UNITS

Date: 06-Nov-13

Qualifier	Description
*	Value exceeds Regulatory Limit
а	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
0	Sample amount is > 4 times amount spiked
Р	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
А	APHA Standard Methods
D	ASTM
Е	EPA
SW	SW-846 Update III
Units Reported	Description
ma/Ka	Milligrams ner Kilogram

mg/Kg

Milligrams per Kilogram

#### Date: 06-Nov-13

#### ALS Group USA, Corp

Client:	ALS Environmental	
Project:	1311143	Case Narrative
Work Order:	1311181	

Batch R129921, Method SR_7.3.4.2_WST, Sample 1311181-01A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

Batch R129963, Method CNR_7.3.3.2_WST, Sample 1311181-01A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

#### ALS Group USA, Corp

Client: ALS Environmental

**Project:** 1311143

 Sample ID:
 1311143-01B

 Collection Date:
 9/24/2013 02:07 PM

#### Work Order: 1311181 Lab ID: 1311181-01 Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			SW7.3.	3.2		Analyst: <b>ND</b>
Cyanide, Reactive	ND	Н	100	mg/Kg	1	11/6/2013
SULFIDE, REACTIVE			SW7.3.	4.2		Analyst: ND
Sulfide, Reactive	240	Н	100	mg/Kg	1	11/5/2013 02:00 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

### ALS Group USA, Corp

Client:	ALS Environmental
Work Order:	1311181
Project:	1311143

### QC BATCH REPORT

Batch ID: R129921	Instrument ID WET	СНЕМ		Method	: SW7.3	.4.2							
MBLK	Sample ID: MB-R12992	I-R12992	1			U	Inits: mg/ł	٢g		Anal	ysis Date: 1	1/5/2013 (	02:00 PM
Client ID:		Run ID	: WETCH	HEM_131105	5M	Se	qNo: <b>2523</b>	666	Prep D	Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit		D Ref alue	%RPD	RPD Limit	Qual
Sulfide, Reactive		ND	100										
LCS	Sample ID: LCS-R12992	21-R12992	21			U	Inits: <b>mg/ł</b>	٢g		Anal	ysis Date: 1	1/5/2013 (	02:00 PM
Client ID:		Run ID	WETCH	HEM_131105	5M	Sec	qNo: <b>2523</b>	667	Prep D	Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit		D Ref alue	%RPD	RPD Limit	Qual
Sulfide, Reactive		1638	100	2149		0	76.2	60-120			0		
The following samp	les were analyzed in this	batch:	13	311181-01A									

#### Batch ID: R129963 Instrument ID WETCHEM Method: SW7.3.3.2

MBLK	Sample ID: MB-R129963	B-R129963	3			Unit	s: <b>mg/ł</b>	٨g	Ana	alysis Date:	11/6/2013	
Client ID:		Run ID	WETCH	IEM_131106	BB	SeqN	o: <b>2524</b>	712	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	9	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive		ND	100									
LCS	Sample ID: LCS-R12996	3-R12996	3			Unit	s: <b>mg/ł</b>	٨g	Ana	alysis Date:	11/6/2013	
Client ID:		Run ID	WETCH	IEM_131106	BB	SeqN	o: <b>2524</b>	713	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	9	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive		117.4	100	125		0	94	75-125		0		
MS	Sample ID: 13101619-02	AMS				Unit	s: <b>mg/ł</b>	٢g	Ana	alysis Date:	11/6/2013	
Client ID:		Run ID	WETCH	IEM_131106	BB	SeqN	o: <b>2524</b>	716	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive		235	100	250		0	94	50-150		0		
MSD	Sample ID: 13101619-02	A MSD				Unit	s: <b>mg/ł</b>	۲g	Ana	alysis Date:	11/6/2013	
Client ID:		Run ID	WETCH	IEM_131106	в	SeqN	o: <b>2524</b>	717	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	9	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive		235.1	100	250		0	94	50-150	:	235 0.038	3 35	



**CHAIN-OF-CUSTODY RECORD** 

Page 1 of 1

 Date:
 04-Nov-13

 COC ID:
 15242

 Due Date
 07-Nov-13

Holland, MI 49424

ALS Laboratory Group

Subcontractor:

3352 128th Ave.

ALS)

	Salesperson	Houston House Acct			
C	ustomer Information	- Pi	roject Information	1 ¹	Parameter/Method Request for Analysis
Purchase Order		Project Name	1311143	Α	Reactive Cyanide (SW-846)
Work Order		Project Number		В	Reactive Sulfide (SW-846)
Company Name	ALS Group USA, Corp.	Bill To Company	ALS Group USA, Corp.	С	
Send Report To	Sonia West	Inv Attn	Accounts Payable	D	
Address	10450 Stancliff Rd, Suite 210	Address	10450 Stancliff Rd, Suite 210	E	
				F	
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip	Houston, Texas 77099-4338	G	
Phone	(281) 530-5656	Phone	(281) 530-5656	H	
Fax	(281) 530-5887	Fax	(281) 530-5887	1	
eMail Address	Sonia.West@alsglobal.com	eMail CC		J	
Sample ID	)	Matrix Collection	Date 24hr Bottle		A B C D E F G H I J
1311143-01B (Wa Station Excavation	astewater Spill at Lift	Solid 24/Sep/2	013 14:07 (1) 4OZGNEAT	2	K X

(616) 399-6070

(616) 399-6185

TEL:

FAX:

Acct #:

# RUSH

	RUSH !! Please analyze for reactive cy jumoke.lawal@alsglobal.com	anide & Reactive sulfic	de. Due on 11/7/13. send report t	o sonia.west@alsglobal	.com & cc : results to
$\square$					3,0 00
Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level Std
Relinquished by:	Date/Time	Received by:		0930	

### ALS Group USA, Corp

#### Sample Receipt Checklist

Client Name: ALS - HOUSTON		Date/Time F	Received:	<u>05-Nov-13</u>	<u>3 09:30</u>
Work Order: <u>1311181</u>		Received by	<b>y</b> :	<u>DS</u>	
Checklist completed by Diane Shaw	05-Nov-13 Date	Reviewed by:	Bill Carey eSignature		06-Nov-13 Date
Matrices: <u>Solid</u> Carrier name: <u>FedEx</u>					I
Shipping container/cooler in good condition?	Yes 🗸	No 🗌	Not Prese	ent 🗌	
Custody seals intact on shipping container/cooler?	Yes 🗸	No 🗌	Not Prese	ent 🗌	
Custody seals intact on sample bottles?	Yes	No 🗌	Not Prese	ent 🗹	
Chain of custody present?	Yes 🗸	No 🗌			
Chain of custody signed when relinquished and received?	Yes 🗸	No			
Chain of custody agrees with sample labels?	Yes 🗸	No 🗌			
Samples in proper container/bottle?	Yes 🗸	No			
Sample containers intact?	Yes 🗸	No 🗌			
Sufficient sample volume for indicated test?	Yes 🗸	No			
All samples received within holding time?	Yes	No 🗸			
Container/Temp Blank temperature in compliance?	Yes 🖌	No			
Sample(s) received on ice? Temperature(s)/Thermometer(s):	Yes <b>⊻</b> 3.0 c	No 🗌			
Cooler(s)/Kit(s):					
Date/Time sample(s) sent to storage:		0:21:13 AM			
Water - VOA vials have zero headspace?	Yes	No	No VOA vials	submitted	
Water - pH acceptable upon receipt?	Yes	No 🗌	N/A 🗹		
pH adjusted? pH adjusted by:	Yes	No 🗌	N/A 🗹		

Login Notes:

Client Contacted:	Date Contacted:	Person Contacted:	
Contacted By:	Regarding:		
Comments:			
CorrectiveAction:			
			SRC Page 1 of 1
	10 - ( 00		

______





04-Oct-2013

Aaron Strange Navajo Refining Company PO Box 159 Artesia, NM 88211

Tel: (575) 748-6733 Fax: (575) 746-5421

Re: Wastewater Spill - Artesia

Work Order: 13091139

Dear Aaron,

ALS Environmental received 1 sample on 25-Sep-2013 09:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Sonia West

Electronically approved by: Jumoke M. Lawal

Sonia West Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887 ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 🐊

www.alsglobal.com

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13091139-01 Wastewater Spill at Lift Station

Excavation

9/24/2013 14:07 9/25/2013 09:25

Client: Project: Work Order:	Navajo Refining Company Wastewater Spill - Artesia <b>13091139</b>		•	Work Order S	Sample Sumi	nary
Lab Samp ID C	lient Sample ID	<u>Matrix</u>	Tag Number	<b>Collection Date</b>	Date Received	Hold

Solid

|--|

Date: 04-Oct-13

Client:	Navajo Refining Company	
Project:	Wastewater Spill - Artesia	<b>Case Narrative</b>
Work Order:	13091139	

Batch 73408, VÔŠÚÁÙ^{ ãç[|ææä¦^Á∪¦*æ} ã&•ÁFHFFÐÌÖI €ÉÂÙæ{]|^ÁÙŠÔÙÖVOËFH€JÖI KÁV@ÁŠÔÙÖ ÜÚÖÁ ærÁ[`orãå^Á[,-Ás@Á&[}d[|Áã[ãorÁ[¦ÁÚ^} cæ&@[¦[]@}][|Áæ)åÁ/[cæ‡ÁÔ¦^•[|•ÈÁV@ÁŠÔÙÁæ)å ŠÔÙÖÁ^&[ç^¦ãt•Á, ^¦^Á,ãc@3,Ás@Á&[}d[|Áã[ãorÈ

#### Client: Navajo Refining Company

Project: Wastewater Spill - Artesia

Sample ID: Wastewater Spill at Lift Station Excavation

Collection Date: 9/24/2013 02:07 PM

Work Order: 13091139 Lab ID: 13091139-01

Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY			SW7470		Prep Date: 9/30/2013	•
Mercury	U		0.000200	) mg/L	1	9/30/2013 06:14 PM
TCLP METALS			SW1311	/6020	Prep Date: 9/27/2013	Analyst: SKS
Arsenic	U		0.0500	) mg/L	10	9/27/2013 03:40 PM
Barium	0.137		0.0500	) mg/L	10	9/27/2013 03:40 PM
Cadmium	U		0.0200	) mg/L	10	9/27/2013 03:40 PM
Chromium	U		0.0500	) mg/L	10	9/27/2013 03:40 PM
Lead	U		0.0500	) mg/L	10	9/27/2013 03:40 PM
Selenium	U		0.0500	) mg/L	10	9/27/2013 03:40 PM
Silver	U		0.0500	) mg/L	10	9/27/2013 03:40 PM
TCLP SEMIVOLATILES			SW1311	/8270	Prep Date: 9/27/2013	Analyst: JLJ
2,4,5-Trichlorophenol	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
2,4,6-Trichlorophenol	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
2,4-Dinitrotoluene	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Cresols, Total	U		0.015	5 mg/L	1	10/2/2013 04:04 PM
Hexachlorobenzene	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Hexachlorobutadiene	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Hexachloroethane	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Nitrobenzene	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Pentachlorophenol	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Pyridine	U		0.0050	) mg/L	1	10/2/2013 04:04 PM
Surr: 2,4,6-Tribromophenol	79.4		36-126	5 %REC	1	10/2/2013 04:04 PM
Surr: 2-Fluorobiphenyl	72.7		43-125	5 %REC	1	10/2/2013 04:04 PM
Surr: 2-Fluorophenol	74.5		37-125	5 %REC	1	10/2/2013 04:04 PM
Surr: 4-Terphenyl-d14	84.4		32-125	5 %REC	1	10/2/2013 04:04 PM
Surr: Nitrobenzene-d5	88.3		37-125	5 %REC	1	10/2/2013 04:04 PM
Surr: Phenol-d6	86.7		40-125	5 %REC	1	10/2/2013 04:04 PM
TCLP VOLATILES			SW1311	/8260B	Prep Date: 9/27/2013	Analyst: PC
1,1-Dichloroethene	U		0.10	) mg/L	20	10/1/2013 05:00 AM
1,2-Dichloroethane	U		0.10	) mg/L	20	10/1/2013 05:00 AM
1,4-Dichlorobenzene	U		0.10	) mg/L	20	10/1/2013 05:00 AM
2-Butanone	U		0.20	) mg/L	20	10/1/2013 05:00 AM
Benzene	U		0.10	) mg/L	20	10/1/2013 05:00 AM
Carbon tetrachloride	U		0.10	) mg/L	20	10/1/2013 05:00 AM
Chlorobenzene	U		0.10	) mg/L	20	10/1/2013 05:00 AM
Chloroform	U		0.10	) mg/L	20	10/1/2013 05:00 AM
Tetrachloroethene	U			) mg/L	20	10/1/2013 05:00 AM
Trichloroethene	U		0.10	) mg/L	20	10/1/2013 05:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 13091139
Lab ID: 13091139-01
Matrix: SOLID

Analyses	Result Qu	Report 1al Limit Units	Dilution Factor	Date Analyzed
Vinyl chloride	U	0.10 mg/L	20	10/1/2013 05:00 AM
Surr: 1,2-Dichloroethane-d4	102	70-125 %REC	20	10/1/2013 05:00 AM
Surr: 4-Bromofluorobenzene	97.0	72-125 %REC	20	10/1/2013 05:00 AM
Surr: Dibromofluoromethane	106	71-125 %REC	20	10/1/2013 05:00 AM
Surr: Toluene-d8	96.9	75-125 %REC	20	10/1/2013 05:00 AM

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

Work Orde Client: Project:	e <b>r:</b> 13091139 Navajo Refining Wastewater Spill					DATES REPORT
Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID 7	3408 Test Name:	TCLP Semivolatile	<u>s</u>			
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 3:09:09 PM	9/27/2013 10:17 AM	10/2/2013 04:04 PM
Batch ID 7	<u>3416</u> <u><b>Test Name:</b></u>	TCLP Metals				
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 8:00:00 AM	9/27/2013 10:00 AM	9/27/2013 03:40 PM
Batch ID 7	<u>3461</u> <u>Test Name:</u>	TCLP Mercury				
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 8:00:00 AM	9/30/2013 11:02 AM	9/30/2013 06:14 PM
Batch ID R	<u>Test Name:</u>	TCLP Volatiles				
13091139-01	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/28/2013 9:00:00 AM	9/27/2013 05:00 PM	10/1/2013 05:00 AM

Client:	Navajo Refining Company
Work Order:	13091139
Project:	Wastewater Spill - Artesia

### **QC BATCH REPORT**

Batch ID: 73	416 Instrument ID ICPMS05		Method	SW131	11/60	20					
MBLK	Sample ID: MBLKT1-092613-73416				Ur	nits: <b>mg/</b>	L	Analy	sis Date: 9	/27/2013 (	)3:28 PM
Client ID:	Ru	In ID: ICPMS	05_130927A		Seq	No: 3372	2767	Prep Date: 9/2	27/2013	DF: 10	)
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500									
Barium	0.04562	0.0500									J
Cadmium	U	0.0200									
Chromium	U	0.0500									
Lead	U	0.0500									
Selenium	0.01023	0.0500									J
Silver	U	0.0500									
MBLK	Sample ID: MBLKW3-092713-73416				Ur	nits: <b>mg/</b>	L	Analy	sis Date: 9	/27/2013 (	)3:31 PM
Client ID:	Ru	In ID: ICPMS	05_130927A		Seq	No: 3372	2768	Prep Date: 9/2	27/2013	DF: 10	)
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500									
Barium	U	0.0500									
Cadmium	U	0.0200									
Chromium	U	0.0500									
Lead	U	0.0500									
Selenium	U	0.0500									
Silver	U	0.0500									
LCS	Sample ID: MLCSW3-092713-73416				Ur	nits: <b>mg/</b>	L	Analy	sis Date: 9	/27/2013 (	)3:33 PM
Client ID:	Ru	In ID: ICPMS	05_130927A		Seq	No: 3372	2769	Prep Date: 9/2	27/2013	DF: 10	)
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4864	0.0500	0.5		0	97.3	80-120				
Barium	0.486	0.0500	0.5		0	97.2	80-120				
Cadmium	0.4791	0.0200	0.5		0	95.8	80-120				

#### _____

0.4922

0.4826

0.5094

0.4932

0.0500

0.0500

0.0500

0.0500

0.5

0.5

0.5

0.5

0

0

0

0

98.4

96.5

102

98.6

80-120

80-120

80-120

80-120

Chromium

Selenium

Lead

Silver

Batch ID: 73416

Instrument ID ICPMS05

Method: SW1311/6020

Client ID: Analyte Arsenic		Run	ID: ICPMS	0E 4200274							
Arsenic				05_130927A	Se	eqNo: <b>337</b> 2	2779	Prep Date: 9/27	/2013	DF: <b>10</b>	
		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
		0.4908	0.0500	0.5	0.000654	98	75-125				
Barium		1.866	0.0500	0.5	1.363	101	75-125				
Cadmium		0.4825	0.0200	0.5	0.003663	95.8	75-125				
Chromium		0.4944	0.0500	0.5	0.007794	97.3	75-125				
Lead		0.5033	0.0500	0.5	0.02031	96.6	75-125				
Selenium		0.5265	0.0500	0.5	0.01452	102	75-125				
Silver		0.4746	0.0500	0.5	0.000548	94.8	75-125				
MSD	Sample ID: 1309685-01AMSI	D			ι	Jnits: <b>mg/</b>	L	Analysi	s Date: 9/	27/2013 0	3:57 PM
Client ID:		Run	ID: ICPMS	05_130927A	Se	eqNo: <b>337</b> 2	2780	Prep Date: 9/27	/2013	DF: <b>10</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic		0.4823	0.0500	0.5	0.000654	96.3	75-125	0.4908	1.76	20	
Barium		1.789	0.0500	0.5	1.363	85.4	75-125	1.866	4.21	20	
Cadmium		0.4702	0.0200	0.5	0.003663	93.3	75-125	0.4825	2.59	20	
Chromium		0.4836	0.0500	0.5	0.007794	95.2	75-125	0.4944	2.22	20	
Lead		0.4826	0.0500	0.5	0.02031	92.5	75-125	0.5033	4.19	20	
Selenium		0.5019	0.0500	0.5	0.01452	97.5	75-125	0.5265	4.79	20	
Silver		0.4627	0.0500	0.5	0.000548	92.4	75-125	0.4746	2.55	20	

DUP	Sample ID: 1309685-01ADUP				Units: <b>mg/</b>	L	Analysi	s Date: 9/	27/2013 0	3:52 PM
Client ID:	Rur	n ID: ICPMS	05_130927 <i>A</i>	l	SeqNo: 3372	2778	Prep Date: 9/27	/2013	DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500					0.000654	0	25	
Barium	1.34	0.0500					1.363	1.67	25	
Cadmium	U	0.0200					0.003663	0	25	
Chromium	U	0.0500					0.007794	0	25	
Lead	0.01903	0.0500					0.02031	0	25	J
Selenium	0.01275	0.0500					0.01452	0	25	J
Silver	U	0.0500					0.000548	0	25	

The following samples were analyzed in this batch:

13091139-01A Batch ID: 73461

### QC BATCH REPORT

Instrument ID HG03

Method: SW7470

					-					
MBLK	Sample ID: GBLKW4-093013-73461				Units: <b>mg/</b>	ľL	Analysi	is Date: 9	/30/2013 0	5:51 PM
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5908	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200	)							
MBLK	Sample ID: GBLKT1-092813-73461				Units: mg/	۲L	Analys	is Date: 9	/30/2013 0	6:01 PN
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5914	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200	)							
LCS	Sample ID: GLCSW4-093013-73461				Units: mg/	Ľ	Analys	is Date: 9	/30/2013 0	5:52 PM
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5909	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0048	0.000200	0.005		0 96	80-120				
MS	Sample ID: 13091157-01CMS				Units: mg/	۲L	Analys	is Date: 9	/30/2013 0	5:57 PM
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5912	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	-0.00003	38 100	75-125				
MSD	Sample ID: 13091157-01CMSD				Units: <b>mg/</b>	۲L	Analys	is Date: 9	/30/2013 0	5:59 PM
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5913	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0048	0.000200	0.005	-0.0000	38 96.8	75-125	0.00496	3.28	8 20	
DUP	Sample ID: 13091157-01CDUP				Units: mg/	۲L	Analys	is Date: <b>9</b>	/30/2013 0	5:56 PM
Client ID:	Ru	n ID: <b>HG03</b>	_130930A		SeqNo: 337	5911	Prep Date: 9/30	/2013	DF: <b>1</b>	
Analyte	Result	PQL	_ SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200	)				-0.000038	C	20	
The followi	ng samples were analyzed in this batc		13091139- 01A							

Batch ID: 73408

Instrument ID SV-5

Method: SW1311/8270

MBLK Sample ID: SBLKT2-1	30927-73408				Units: µg/	Ľ	Analy	sis Date:	10/2/2013	06:43 PM
Client ID:	Run I	D: SV-5_1	31003A		SeqNo: 338	80068	Prep Date: 9/2	27/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	U	5.0								
2,4,6-Trichlorophenol	U	5.0								
2,4-Dinitrotoluene	U	5.0								
Cresols, Total	U	15								
Hexachlorobenzene	U	5.0								
Hexachlorobutadiene	U	5.0								
Hexachloroethane	U	5.0								
Nitrobenzene	U	5.0								
Pentachlorophenol	U	5.0								
Pyridine	U	5.0								
Surr: 2,4,6-Tribromophenol	91.8	5.0	100		0 91.8	36-126		0		
Surr: 2-Fluorobiphenyl	78.43	5.0	100		0 78.4	43-125		0		
Surr: 2-Fluorophenol	73.56	5.0	100		0 73.6	37-125		0		
Surr: 4-Terphenyl-d14	100.1	5.0	100		0 100	32-125		0		
Surr: Nitrobenzene-d5	68.75	5.0	100		0 68.8	37-125		0		
Surr: Phenol-d6	67.93	5.0	100		0 67.9	40-125		0		

LCS Sample ID: SLCST2-130927-73408 Units: µg/L Analysis Date: 10/3/2013 02:47 PM Client ID: Run ID: SV-5_131003A SeqNo: 3380072 Prep Date: 9/27/2013 DF: 1 SPK Ref RPD Ref RPD Control Value Limit Limit Value %RPD Qual Analyte Result PQL SPK Val %REC 2,4,5-Trichlorophenol 84.69 5.0 100 0 84.7 55-120 2,4,6-Trichlorophenol 82.97 100 0 5.0 83 55-120 0 2,4-Dinitrotoluene 45.63 5.0 50 91.3 55-125 Cresols, Total 219.3 15 250 0 87.7 40-120 44.72 5.0 50 0 89.4 55-120 Hexachlorobenzene Hexachlorobutadiene 42.43 5.0 50 0 84.9 55-120 0 Hexachloroethane 36.85 5.0 50 73.7 55-120 34.58 50 0 55-120 Nitrobenzene 5.0 69.2 Pentachlorophenol 85.09 5.0 100 0 85.1 50-135 Pyridine 22.82 5.0 50 0 45.6 30-120 Surr: 2,4,6-Tribromophenol 106.5 5.0 100 0 106 36-126 0 Surr: 2-Fluorobiphenyl 72.92 100 0 43-125 0 5.0 72.9 0 0 Surr: 2-Fluorophenol 82.36 5.0 100 82.4 37-125 Surr: 4-Terphenyl-d14 103.6 5.0 100 0 104 32-125 0 Surr: Nitrobenzene-d5 66.12 5.0 100 0 66.1 37-125 0 Surr: Phenol-d6 85.66 5.0 100 0 85.7 40-125 0

Note:

See Qualifiers Page for a list of Qualifiers and their explanation.

**Project:** 

Batch ID: 73408

Instrument ID SV-5

Method: SW1311/8270

LCSD Sample ID: SLCSDT2-	-130927-73408			I	Units: µg/l	-	Analysi	s Date: 10	/2/2013 0	7:27 PN
Client ID:	Run II	D: SV-5_1	31003A	Se	eqNo: <b>338</b>	0070	Prep Date: 9/27	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	82.14	5.0	100	0	82.1	55-120	84.69	3.05	25	
2,4,6-Trichlorophenol	80.22	5.0	100	0	80.2	55-120	82.97	3.37	25	
2,4-Dinitrotoluene	40.98	5.0	50	0	82	55-125	45.63	10.8	 25	
Cresols, Total	170.3	15	250	0	68.1	40-120	219.3	25.2	25	R
Hexachlorobenzene	44.56	5.0	50	0	89.1	55-120	44.72	0.37	25	
Hexachlorobutadiene	47.1	5.0	50	0	94.2	55-120	42.43	10.4	25	
Hexachloroethane	36.41	5.0	50	0	72.8	55-120	36.85	1.18	25	
Nitrobenzene	33.67	5.0	50	0	67.3	55-120	34.58	2.66	25	
Pentachlorophenol	63.88	5.0	100	0	63.9	50-135	85.09	28.5	25	R
Pyridine	25.09	5.0	50	0	50.2	30-120	22.82	9.48	25	
Surr: 2,4,6-Tribromophenol	95.85	5.0	100	0	95.8	36-126	106.5	10.5	25	
Surr: 2-Fluorobiphenyl	76.93	5.0	100	0	76.9	43-125	72.92	5.36	25	
Surr: 2-Fluorophenol	76.63	5.0	100	0	76.6	37-125	82.36	7.21	25	
Surr: 4-Terphenyl-d14	92.69	5.0	100	0	92.7	32-125	103.6	11.1	25	
Surr: Nitrobenzene-d5	64.27	5.0	100	0	64.3	37-125	66.12	2.85	25	
Surr: Phenol-d6	68.76	5.0	100	0	68.8	40-125	85.66	21.9	25	
	01AMS				Units: µa/l	_	Analvsi	s Date: 10	/3/2013 0	3:54 P
MS Sample ID: 13091139-		D: SV-5 1	31003A		Units: <b>µg/l</b> eaNo: <b>338</b>			s Date: 10		3:54 P
MS Sample ID: 13091139-		D: SV-5_1	31003A		Units: <b>µg/l</b> eqNo: <b>338</b>		Analysi Prep Date: <b>9/27</b>		/3/2013 0 DF: 1	3:54 P
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S		D: SV-5_1	31003A							3:54 F
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation		D: <b>SV-5_1</b> PQL	<b>31003A</b> SPK Val	Se		0184	Prep Date: 9/27		DF: <b>1</b>	<b>3:54 P</b> Qua
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation	itation Run II			Se SPK Ref	eqNo: <b>338</b>	0184 Control	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation	tation Run II	PQL	SPK Val	Se SPK Ref Value	eqNo: <b>338</b> %REC	0184 Control Limit	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	Result 84.55	PQL 5.0	SPK Val	SPK Ref Value 0	eqNo: <b>338</b> %REC 84.6	0184 Control Limit 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene	itation         Run II           Result         84.55           77.79         77.79	PQL 5.0 5.0	SPK Val 100 100	SPK Ref Value 0 0	%REC 84.6 77.8	0184 Control Limit 55-120 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total	Result           84.55           77.79           46.14	PQL 5.0 5.0 5.0	SPK Val 100 100 50	SPK Ref Value 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3	0184 Control Limit 55-120 55-125	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene	Result           84.55           77.79           46.14           174.5	PQL 5.0 5.0 5.0 15	SPK Val 100 100 50 250	SPK Ref Value 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8	Control Limit 55-120 55-120 55-125 40-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobutadiene	Result           Result           84.55           77.79           46.14           174.5           43.86	PQL 5.0 5.0 15 5.0	SPK Val 100 100 50 250 50	SPK Ref Value 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7	Control Limit 55-120 55-120 55-125 40-120 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobutadiene Hexachloroethane	Result           84.55           77.79           46.14           174.5           43.86           44.35	PQL 5.0 5.0 15 5.0 5.0 5.0	SPK Val 100 100 50 250 50	SPK Ref Value 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7	Control Limit 55-120 55-125 40-120 55-120 55-120 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol	Result           Result           84.55           77.79           46.14           174.5           43.86           44.35           38.8	PQL 5.0 5.0 15 5.0 5.0 5.0 5.0	SPK Val 100 100 50 250 50 50	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6	Control Limit 55-120 55-120 55-125 40-120 55-120 55-120 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobutadiene Hexachlorobutadiene Nitrobenzene Pentachlorophenol	Result         Result           84.55         77.79           46.14         174.5           43.86         44.35           38.8         33.42	PQL 5.0 5.0 15 5.0 5.0 5.0 5.0 5.0	SPK Val 100 50 250 50 50 50	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6 66.8	Control Limit 55-120 55-120 55-125 40-120 55-120 55-120 55-120 55-120	Prep Date: 9/27 RPD Ref	/2013	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobutadiene Hexachlorobutadiene Nitrobenzene Pentachlorophenol	Result           Result           84.55           77.79           46.14           174.5           43.86           44.35           38.8           33.42           82.56	PQL 5.0 5.0 15 5.0 5.0 5.0 5.0 5.0 5.0	SPK Val 100 50 250 50 50 50 50 100	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6 66.8 82.6	Control Limit 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120	Prep Date: <b>9/27</b> RPD Ref Value	/2013 %RPD	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobutadiene Hexachlorophenol Nitrobenzene Pentachlorophenol Pyridine	Result           Result           84.55           77.79           46.14           174.5           43.86           44.35           38.8           33.42           82.56           26.93	PQL 5.0 5.0 15 5.0 5.0 5.0 5.0 5.0 5.0 5.0	SPK Val 100 50 250 50 50 50 100 50	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6 66.8 82.6 53.9	Control Limit 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 50-135 30-120	Prep Date: 9/27 RPD Ref Value	/2013 %RPD	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Pentachlorophenol Pyridine Surr: 2,4,6-Tribromophenol	Result         Result           84.55         77.79           46.14         174.5           43.86         44.35           38.8         33.42           82.56         26.93           102.3         102.3	PQL 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	SPK Val 100 50 250 50 50 50 100 50 100	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6 66.8 82.6 53.9 102	Control Limit 55-120 55-120 55-125 40-120 55-120 55-120 55-120 55-120 55-120 50-135 30-120 36-126	Prep Date: 9/27 RPD Ref Value 0 0	/2013 %RPD	DF: <b>1</b> RPD	
MS Sample ID: 13091139- Client ID: Wastewater Spill at Lift S Excavation Analyte 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrotoluene Cresols, Total Hexachlorobenzene Hexachlorobenzene Hexachlorobutadiene Hexachlorophenol Nitrobenzene Pentachlorophenol Pyridine Surr: 2,4,6-Tribromophenol Surr: 2-Fluorobiphenyl	Result         Result           84.55         77.79           46.14         174.5           43.86         44.35           38.8         33.42           82.56         26.93           102.3         74.81	PQL 5.0 5.0 15 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	SPK Val 100 50 250 50 50 50 100 100 100	SPK Ref Value 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eqNo: <b>338</b> %REC 84.6 77.8 92.3 69.8 87.7 88.7 77.6 66.8 82.6 53.9 102 74.8	Control Limit 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 55-120 50-135 30-120 36-126 43-125	Prep Date: 9/27 RPD Ref Value 0 0 0 0 0	/2013 %RPD	DF: <b>1</b> RPD	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

69.75

5.0

Surr: Phenol-d6

0

0

69.8

40-125

100

Client: Work Order: Project:	Navajo Refining Company 13091139 Wastewater Spill - Artesia		QC BATCH REPORT
Batch ID: <b>73408</b>	Instrument ID SV-5	Method: <b>SW1311/8270</b>	

The following samples were analyzed in this batch:

13091139-01A

Batch ID: R154586

Instrument ID VOA1

Method: SW1311/8260B

MBLK Sample ID: VBLKW-13	0930-R154586				Units: µg/I	-	Analy	sis Date: 9	/30/2013 1	11:32 PN
Client ID:	Run II	D: VOA1_	130930E		SeqNo: 337	6306	Prep Date:		DF: <b>1</b>	
				SPK Ref		Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
1,1-Dichloroethene	U	5.0								
1,2-Dichloroethane	U	5.0								
1,4-Dichlorobenzene	U	5.0								
2-Butanone	U	10								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chlorobenzene	U	5.0								
Chloroform	U	5.0								
Tetrachloroethene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Surr: 1,2-Dichloroethane-d4	50.94	5.0	50		0 102	70-125		0		
Surr: 4-Bromofluorobenzene	49.99	5.0	50		0 100	72.4-125	5	0		
		5.0	50		0 101	71.2-125	5	0		
Surr: Dibromofluoromethane	50.52	5.0	50		0 101					
Surr: Dibromofluoromethane Surr: Toluene-d8	50.52 51.39	5.0 5.0	50 50		0 103	75-125		0		
Surr: Toluene-d8	51.39				0 103	75-125		0	0/1/2013 (	04:10 AN
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13	51.39 80927-R154586	5.0	50		0 103 Units: μ <b>g/l</b>	75-125	Analy	0 sis Date: <b>1</b>		
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13	51.39 80927-R154586		50		0 103	75-125 - 6310	Analy Prep Date: <b>9/2</b>	0 sis Date: <b>1</b>	DF: <b>20</b>	
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID:	51.39 80927-R154586	5.0	50	SPK Ref Value	0 103 Units: μ <b>g/l</b>	75-125	Analy	0 sis Date: <b>1</b>		
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte	51.39 30927-R154586 Run II Result	5.0 D: <b>VOA1_</b> PQL	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte 1,1-Dichloroethene	51.39 30927-R154586 Run II Result U	5.0 D: <b>VOA1_</b> PQL 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:         Analyte         1,1-Dichloroethene         1,2-Dichloroethane	51.39 30927-R154586 Run II Result U U	5.0 D: <b>VOA1_</b> PQL 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte 1,1-Dichloroethene 1,2-Dichloroethane 1,4-Dichlorobenzene	51.39 30927-R154586 Run II Result U U U	5.0 D: VOA1_ PQL 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,2-Dichloroethane       1,4-Dichlorobenzene         2-Butanone       2-Butanone	51.39 30927-R154586 Run II Result U U U U U	5.0 D: VOA1_ PQL 100 100 200	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,2-Dichlorobenzene       2-Butanone         Benzene       Benzene	51.39 30927-R154586 Run II Result U U U U U U	5.0 D: VOA1_ PQL 100 100 200 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,4-Dichlorobenzene       2-Butanone         Benzene       Carbon tetrachloride	51.39 30927-R154586 Run II Result U U U U U U U U U U	5.0 PQL 100 100 200 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte 1,1-Dichloroethene 1,2-Dichloroethane 1,4-Dichlorobenzene 2-Butanone Benzene Carbon tetrachloride Chlorobenzene	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U	5.0 D: VOA1 PQL 100 100 200 100 100 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,2-Dichloroethane       1,4-Dichlorobenzene         2-Butanone       Benzene         Carbon tetrachloride       Chlorobenzene         Chloroform       Chloroform	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U	5.0 D: VOA1_ PQL 100 100 200 100 100 100 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,2-Dichloroethane       2-Butanone         Benzene       Carbon tetrachloride         Chlorobenzene       Chloroform         Tetrachloroethene       1	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U	5.0 PQL 100 100 200 100 100 100 100 100	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:       Analyte         1,1-Dichloroethene       1,2-Dichloroethane         1,2-Dichloroethane       1,4-Dichlorobenzene         2-Butanone       Benzene         Carbon tetrachloride       Chlorobenzene         Chloroform       Tetrachloroethene         Trichloroethene       Trichloroethene	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U	5.0 PQL 100 100 100 100 100 100 100 10	50 130930E		0 103 Units: <b>µg/I</b> SeqNo: <b>337</b>	75-125 - 6310 Control	Analy Prep Date: <b>9/2</b> RPD Ref	0 sis Date: 1 27/2013	DF: <b>20</b> RPD	)
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte 1,1-Dichloroethene 1,2-Dichloroethane 1,4-Dichlorobenzene 2-Butanone Benzene Carbon tetrachloride Chlorobenzene Chloroform Tetrachloroethene Trichloroethene Vinyl chloride	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U U U U U U U	5.0 PQL 100 100 200 100 100 100 100 100 100 40	50 130930E SPK Val		0 103 Units: µg/l SeqNo: 337 %REC	75-125 - 6310 Control Limit	Analy Prep Date: <b>9/2</b> RPD Ref Value	0 sis Date: 1 27/2013 %RPD	DF: <b>20</b> RPD	)
Surr: Toluene-d8         MBLK       Sample ID: MBLKV1-13         Client ID:         Analyte         1,1-Dichloroethene         1,2-Dichloroethane         1,4-Dichlorobenzene         2-Butanone         Benzene         Carbon tetrachloride         Chlorobenzene         Chloroform         Tetrachloroethene         Trichloroethene         Vinyl chloride         Surr: 1,2-Dichloroethane-d4	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U	5.0 PQL 100 100 100 100 100 100 100 10	50 130930E SPK Val 0 0 0 0 0 0 0 0 0 0 0 0 0		0 103 Units: µg/l SeqNo: 337 %REC	75-125 6310 Control Limit	Analy Prep Date: <b>9/2</b> RPD Ref Value	0 sis Date: 1 27/2013 %RPD	DF: <b>20</b> RPD	)
Surr: Toluene-d8  MBLK Sample ID: MBLKV1-13 Client ID: Analyte 1,1-Dichloroethene 1,2-Dichloroethane 1,4-Dichlorobenzene 2-Butanone Benzene Carbon tetrachloride Chlorobenzene Chloroform Tetrachloroethene Trichloroethene Vinyl chloride	51.39 30927-R154586 Run II Result U U U U U U U U U U U U U U U U U U U	5.0 PQL 100 100 200 100 100 100 100 100 100 40	50 130930E SPK Val		0 103 Units: µg/l SeqNo: 337 %REC	75-125 - 6310 Control Limit	Analy Prep Date: <b>9/2</b> RPD Ref Value	0 sis Date: 1 27/2013 %RPD	DF: <b>20</b> RPD	)

Batch ID: R154586

Instrument ID VOA1

Method: SW1311/8260B

LCS Sample ID: VLCSW-13	0930-R154586				Units: µg/L	-	Analy	/sis Date: 9	/30/2013	10:41 PM
Client ID:	Run IE	: VOA1_	130930E	S	eqNo: <b>337</b> (	6305	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	51.11	5.0	50	0	102	73-124				
1,2-Dichloroethane	52.15	5.0	50	0	104	76-120				
1,4-Dichlorobenzene	50.27	5.0	50	0	101	70-130				
2-Butanone	104.2	10	100	0	104	70-130				
Benzene	52.56	5.0	50	0	105	70-128				
Carbon tetrachloride	51.09	5.0	50	0	102	70-130				
Chlorobenzene	47.61	5.0	50	0	95.2	72-127				
Chloroform	51.55	5.0	50	0	103	70-130				
Tetrachloroethene	50.16	5.0	50	0	100	70-130				
Trichloroethene	53.99	5.0	50	0	108	72-129				
Vinyl chloride	54.23	2.0	50	0	108	70-130				
Surr: 1,2-Dichloroethane-d4	50.76	5.0	50	0	102	70-125		0		
Surr: 4-Bromofluorobenzene	49.56	5.0	50	0	99.1	72-125		0		
Surr: Dibromofluoromethane	51.66	5.0	50	0	103	71-125		0		
Surr: Toluene-d8	50.87	5.0	50	0	102	75-125		0		

MS Sample ID: 13091337-	01AMS			I	Units: µg/l	_	Analysis Date: 10/1/2013 02:2				
Client ID:	Run II	D: VOA1_	130930E	Se	eqNo: <b>337</b>	6308	Prep Date:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1-Dichloroethene	47.41	5.0	50	0	94.8	73-124					
1,2-Dichloroethane	49.26	5.0	50	0	98.5	76-120					
1,4-Dichlorobenzene	46.02	5.0	50	0	92	70-130					
2-Butanone	104	10	100	0	104	70-130					
Benzene	49.85	5.0	50	0	99.7	70-128					
Carbon tetrachloride	45.47	5.0	50	0	90.9	70-130					
Chlorobenzene	48.98	5.0	50	0	98	72-127					
Chloroform	109.1	5.0	50	71.57	75	70-130					
Tetrachloroethene	46.17	5.0	50	0	92.3	70-130					
Trichloroethene	47.04	5.0	50	0	94.1	72-129					
Vinyl chloride	49.16	2.0	50	0	98.3	70-130					
Surr: 1,2-Dichloroethane-d4	51.18	5.0	50	0	102	70-125		0			
Surr: 4-Bromofluorobenzene	52.97	5.0	50	0	106	72-125		0			
Surr: Dibromofluoromethane	51.09	5.0	50	0	102	71-125		0			
Surr: Toluene-d8	51.35	5.0	50	0	103	75-125		0			

Batch ID: R154586

Instrument ID VOA1

Method: SW1311/8260B

MSD Sample ID: 13091337-0	1AMSD			l	Jnits: µg/L	-	Analysis Date: 10/1/2013 02:54 AM			
Client ID:	Run I	D: VOA1_	130930E	Se	eqNo: <b>337</b>	6309	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	43.36	5.0	50	0	86.7	73-124	47.41	8.94	20	
1,2-Dichloroethane	48.03	5.0	50	0	96.1	76-120	49.26	2.53	20	
1,4-Dichlorobenzene	48.44	5.0	50	0	96.9	70-130	46.02	5.13	20	
2-Butanone	96.22	10	100	0	96.2	70-130	104	7.76	20	
Benzene	45.94	5.0	50	0	91.9	70-128	49.85	8.16	20	
Carbon tetrachloride	43.75	5.0	50	0	87.5	70-130	45.47	3.85	20	
Chlorobenzene	49.06	5.0	50	0	98.1	72-127	48.98	0.157	20	
Chloroform	108	5.0	50	71.57	72.8	70-130	109.1	1.03	20	
Tetrachloroethene	45.61	5.0	50	0	91.2	70-130	46.17	1.23	20	
Trichloroethene	46.76	5.0	50	0	93.5	72-129	47.04	0.582	20	
Vinyl chloride	45.31	2.0	50	0	90.6	70-130	49.16	8.16	20	
Surr: 1,2-Dichloroethane-d4	48.41	5.0	50	0	96.8	70-125	51.18	5.56	20	
Surr: 4-Bromofluorobenzene	52.85	5.0	50	0	106	72-125	52.97	0.235	20	
Surr: Dibromofluoromethane	47.58	5.0	50	0	95.2	71-125	51.09	7.11	20	
Surr: Toluene-d8	51.26	5.0	50	0	103	75-125	51.35	0.185	20	

The following samples were analyzed in this batch:

13091139-01A

Client: Project: WorkOrder:	Navajo Refining Company Wastewater Spill - Artesia <b>13091139</b>	QUALIFIERS, ACRONYMS, UNITS
Qualifier	Description	
*	Value exceeds Regulatory Limit	
a	Not accredited	
В	Analyte detected in the associated Method Blank above the Repo	rting Limit
E	Value above quantitation range	
Н	Analyzed outside of Holding Time	
J	Analyte detected below quantitation limit	
Μ	Manually integrated, see raw data for justification	
n	Not offered for accreditation	
ND	Not Detected at the Reporting Limit	
О	Sample amount is $> 4$ times amount spiked	
Р	Dual Column results percent difference > 40%	
R	RPD above laboratory control limit	
S	Spike Recovery outside laboratory control limits	
U	Analyzed but not detected above the MDL	
Acronym	Description	
DCS	Detectability Check Study	
DUP	Method Duplicate	
LCS	Laboratory Control Sample	
LCSD	Laboratory Control Sample Duplicate	
MBLK	Method Blank	
MDL	Method Detection Limit	
MQL	Method Quantitation Limit	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	
PDS	Post Digestion Spike	
PQL	Practical Quantitation Limit	
SD	Serial Dilution	
SDL	Sample Detection Limit	
TRRP	Texas Risk Reduction Program	
Units Reported	d Description	
mg/I		

mg/L Milligrams per Liter

Sample	Receipt	Checklist
--------	---------	-----------

D	ate/Time Received:	25-Sep-13	<u>3 09:25</u>	
R	eceived by:	<u>WTJ</u>		
25-Sep-13 Revie	wed by:eSignature			Date
Yes 🗹	No 🗌 Not Prese	ent		
Yes 🗹	No Not Prese	ent		
Yes	No 🗌 Not Pres	ent 🗹		
Yes 🗹	No 🗌			
Yes 🗹	No 🗌			
Yes 🖌	No 🗌			
Yes 🖌	No 🗌			
Yes 🗹	No 🗌			
Yes 🗹	No 🗌			
Yes 🗹	No 🗌			
Yes 🗹	No 🗌			
3.3c/3.3c C/U	IR1	<u>L</u>		
<u>5119</u>				
9/25/13 16:10				
Yes	No L No VOA vials	submitted	$\checkmark$	
Yes	No 🗌 N/A 🗹			
Yes 🗌	No 🗌 N/A 🗹			
	25-Sep-13 Date	Date       eSignature         Yes       No       Not Press         Yes       No       No         Yes       No       Yes         Yes       No       IR1         5119       9/25/13 16:10       Yes         Yes       No       No       No         Yes       No       No       No         Yes       No       No       No	Received by:       WTJ         25-Sep-13       Reviewed by:	Received by:       WTJ         25-Sep-13       Reviewed by:         Date       eSignature         Yes       No         Ne       Not Present         Yes       No         No       Not Present         Yes       No         Yes<

Login Notes:

Client Contacted:	Date Contacted:	Person Contacted:
Contacted By:	Regarding:	
Comments:		
CorrectiveAction:		
		SRO
	17 of 19	

_____



 ✓ ALS Laboratory Group 10450 Stancliff Rd. #210
 Houston, Texas 77099
 (Tel) 281.530.5656
 (Fax) 281.530.5887

#### Chain of Custody Form

Page <u>1</u> of <u>1</u>

# 13091139

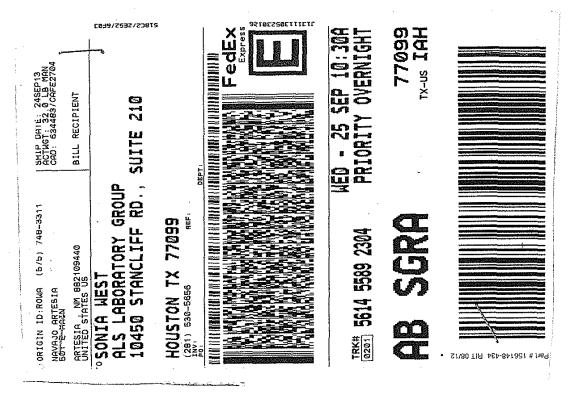
NAVAJO REFINING: Navajo Refining Company

Project: Wastewater Spill - Artesia

						ct Manager: S	and the second se												
L	Cus	tomer Information			Project	t Informatio	n 🦷			•									**
1	Purchase Order			Project N	lame Waste	ewater Spill -	Artesia		AT	CLP Vola	tiles					_			
	Work Order			Project Nu	mber				вт	CLP Sen	ni-Vola	tiles							
	Company Name	Navajo Refining Com	pany	Bill To Com	pany Navaj	o Refining Co	ompany		CTO	CLP Met	als								
	Send Report To	Aaron Strange		Invoice	Attn. Aaron	n Strange			D										
	Address	P. O. Box 159	;	Add	Iress 501 E	ast Main			E F								······································		
2	City/State/Zip	Artesia, New Mexico (	38211-0159	City/Stat	e/Zip Artes	ia, New Mexic	co 88210		G									<u></u>	
	Phone	(575) 748-3311		P	hone (575)	748-3311			н										
i	Fax	(575) 746-5451			Fax (575)				$\frac{1}{1}$										
	e-Mail Address	A.Strange@hollvfrontie	r.com	e-Mail Add		inge@hollyfro	ntier.com		J									<u></u>	
No.	- 	Sample Description		Date	Time	Matrix	Pres.	# Bottles	A	В	С	D	E	F	G	H		J	Hold
1	Wastewater Spill	at Lift Station Excavatio	n	9/24/13	14:07	Solid		1	X	X	X				<u> </u>				
2	·	·····													<b> </b>				
3									<del> </del> -				<u> </u>	<u> </u>					
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Relinq	uished by:	<u>つ</u>	Date: 4/13	Time: 16:15	Received by	Laboratory)	al	1	L.C	ooler Ten	np. QC			neck Bo		<b>v)</b>			
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roaas	d by (Laboratory):		Date:	Time:	Checked by (	cappratory):				3-3	-			Std QC SW846			TRE	RP Leve	VII
Pres	ervative Key:	1-HCL 2-HNO3 3	-H2SO4 4-Na	I OH 5-Na2S2O	3 6-NaH	504 7-Oth	er 8-4 d	egrees C	9-50				her: _						

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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ALS Environmental	
	leal Broken
Houston, Texas 77099 Tel. +1 281 530 5656 Tel. +1 2	Date:

91 <del>1</del>0 91



Mr. John E. Kieling Chief, Hazardous Waste Bureau New Mexico Environmental Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, NM 87505-6306

Mr. Carl Chavez New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505

November 1, 2013

#### RE: Submittal of West Loading Rack Fuel Oil Spill Response

Dear Mr. Kieling and Mr. Chavez:

Enclosed are two paper copies and one electronic copy of the *West Loading Rack Fuel Oil Spill Response*. This document is being submitted as a followup to the verbal release notification made on July 1, 2013. The release was reported using a C-141 form on July 10, 2013.

If you have any questions or comments regarding this report, please feel free to contact me at 575-746-5487.

Sincerely,

mudal in Which

Michael W. Holder Environmental Manager Navajo Refining Company, LLC

c: Pamela R. Krueger, ARCADIS



Mr. Mike Holder Environmental Manager Navajo Refining Company, LLC 501 East Main Artesia, New Mexico 88211

Subject: West Loading Rack Fuel Oil Spill Response

#### Dear Mr. Holder:

ARCADIS has prepared this release response report to describe activities that have occurred to address a fuel oil spill at the West Loading Rack at the Navajo Refining Company (Navajo) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the July 1, 2013 release.

#### Release

On July 1, 2013, railcars were being loaded on the West Loading Rack, specifically tracks 958 and 959. As shown on Figure 2, the West Loading Rack is located in the southwestern portion of the Refinery, near the intersection of US Highways 82 and 285. The loader had finished loading spot #1 on cars located on tracks 958 and 959. The loader then opened spot #2 on the car located on track 958 and thought spot #2 had been opened on the car located on track 959. The loader installed the outage gauge on spot #2 of the car located on 959 and did not verify the opening of the valve at spot #2 on the car located on track 959. The loader relied on time loading of the cars, estimated a slower loading rate for the filling of two cars, and went to a shelter area at spot #4 while the tanks loaded. Fuel oil was discharged from the spot #2 valve on the car located on track 958 due to the following circumstances: the valve was not opened on spot #2 of the car on track 958 was overfilled.

Approximately 150 barrels of fuel oil was released onto the ground between tracks 957 and 959. Photographs documenting the spill can be seen in Photographs 1 through 5 in Attachment A to this letter.

ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620 www.arcadis-us.com

#### ENVIRONMENT

Date: November 1, 2013

Contact: Pamela R. Krueger

Phone: 713.953.4816

Email: pam.krueger@arcadis-us.com

Our ref: TX000870

#### Imagine the result

### ARCADIS

#### Notification

Section 4.7.4 of the Post-Closure Care Permit (Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) requires that a new release from an existing Area of Concern (AOC) be reported within 15 days. The West Loading Rack is part of AOC 30 in the Permit. Figure 2 shows the location of the West Loading Rack within the refinery.

Section 2.D.1 of the Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resource Department Oil Conservation Division (OCD) for the facility requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.

Navajo personnel reported the release at the West Loading Rack to NMED and OCD both via phone call on July 1, 2013. An initial C-141 release report was submitted to both the HWB and OCD on July 10, 2013. Thus, the initial reporting requirements of both the OCD Discharge Permit and the HWB Post-Closure Care Permit have been met. A final C-141 report has been included in Attachment B to this letter.

#### **Remedial Actions**

Navajo personnel used a vacuum truck to collect free liquids immediately after the spill occurred. Approximately 30 barrels of fuel oil were recovered and returned to process. Navajo contract personnel hand-excavated the stained soil from between tracks 957 and 959 and placed the soil into rolloff containers. The excavated soils were transported to an OCD-approved non-hazardous waste disposal facility (R360 Environmental Solutions). Approximately 156 cubic yards of soil were disposed of at the facility and waste manifests have been included in Attachment C to this letter. The excavation activities are shown in Photographs 6 and 7 in Attachment A to this letter. Clean gravel backfill was brought in to fill the excavation. The gravel was graded and smoothed as shown in Photograph 8 in Attachment A to this letter.

#### **Soil Sampling Results**

Navajo personnel collected soil samples from the release area. Eight grab samples were collected from visibly non-impacted soil after impacted soils were removed during the excavation remedial actions. The soil samples were collected at various locations between tracks 957, 958, and 959 on July 11, 2013 and July 16, 2013. The

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approximate locations of the soil samples are shown in Figure 3 and are shown in Photographs 9 through 16 in Attachment A.

Soil from each sample location was placed directly into clean glass soil jars, sealed, labeled, and placed into a sealed, cooled container for shipment to the laboratory. The eight soil samples were submitted to ALS Laboratories located in Houston, Texas for the following analyses:

- Total Petroleum Hydrocarbons (TPH ) by Method 8015 Modified:
  - Diesel Range Organics (DRO)
  - Gasoline Range Organics (GRO)
- Volatile Organic Compounds (VOCs) by Method 8260C
  - Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)

Attachment D to this letter report contains the laboratory analytical reports for the soil samples. Tables 1 and 2 present a summary of the soil analytical data. As shown in Tables 1 and 2, DRO was detected above the laboratory reporting limit in six of the eight samples collected. GRO was detected in one of eight samples and none of the BTEX compounds were detected in any of the samples.

In Table 1, the analytical results were screened against the NMED soil screening levels (SSLs), as found in Tables A-1 and 6-2, 2012 NMED Risk Assessment Guidance dated June 2012. Because the West Loading Rack is within the Refinery and access is controlled, the residential exposure scenario was not evaluated. Instead, for BTEX, the SSLs selected for screening the data were the lower of the construction worker (CW) or the industrial/occupational (Ind/Occ) pathways. BTEX was not detected above the laboratory reporting limit in any soil samples. For TPH, the screening value for Industrial Direct Exposure for "#3 and #6 Fuel Oil" was used to screen the DRO. Where DRO was detected above the laboratory reporting limit, it was detected below the SSLs.

In Table 2, the analytical results were screened against the OCD Remediation Action Levels (RALs) based on soils with a ranking score of greater than 19 as described in IV.A.2. of the OCD Guidelines for Remediation of Leaks, Spills and Releases dated August 13, 1993. The soils in this area received a ranking score of greater than 19 because the depth to groundwater in this area is less than 50 feet. Since the BTEX compounds were not detected above the laboratory reporting limit, there were no exceedences of the benzene or total BTEX RALs. TPH GRO and

### ARCADIS

Mr. Mike Holder November 1, 2013

DRO were either not detected above the laboratory reporting limit or detected below the RAL in all samples except Site#4 –  $2^{nd}$  Bay (located in spot #1 between tracks 957 and 958). DRO was detected at 1,200 mg/kg in the sample collected at Site#4 –  $2^{nd}$  Bay, above the RAL of 100 mg/kg. The stained soils were excavated to the maximum extent practical based on the surrounding infrastructure and no additional excavation is feasible.

#### Conclusion

The remedial response to the July 1, 2013 release of approximately 150 barrels of fuel oil from the West Loading Rack has been completed. All stained soils have been excavated to the extent practical based on the surrounding infrastructure. No further remedial action is recommended at this time.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

ARCADIS U.S., Inc.

Pamela R. Krueger

Pamela R. Krueger Senior Project Manager

Enclosures: Table 1 Figures Attachment A: Photographic Log Attachment B: Final C-141 Incident Report Attachment C: Waste Manifests Attachment D: Analytical Reports



Tables

# Table 1 - Summary of Soil Analytical Results Compared to NMED SSLs West Loading Rack Fuel Oil Spill Response

		Sample ID	East 1st Bay	East 2nd Bay	East 3rd Bay	East 3rd Bay #2	Site#1 - 2nd Bay	Site#2 - 2nd Bay	Site#3 - 2nd Bay	Site#4 - 2nd Bay
	S	Sample Location	Spot #1 Between 958 & 959	Spot #2 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 957 & 958	Spot #3 Between 957 & 958	Spot #2 Between 957 & 958	Spot #1 Between 957 & 958
		Date:	7/11/2013	7/11/2013	7/11/2013	7/11/2013	7/16/2013	7/16/2013	7/16/2013	7/16/2013
Analyte	NMED SSL	SSL Pathway								
Total Petroleum Hydrocarbons	(mg/kg)									
TPH - Gasoline Range Organics			< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.15
TPH - Diesel Range Organics	1.60E+03	TPH SSL	14	< 1.7	3.5	< 8.5	4.0	23	14	1,200
Volatile Organic Compounds (µ	g/kg)									
Benzene	8.47E+04	Ind/Occ	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	3.78E+05	Ind/Occ	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	1.34E+07	CW	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Xylenes	7.43E+05	CW	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

#### Indicates detection above screening value.

#### Bold font indicates detection above the laboratory reporting limit.

Sample locations are described by the spot number within the loading rack (see Figure 3) and the railroad tracks between which the sample was collected.

TPH results are screened against the "#3 and #6 Fuel Oil" Industrial SSL from Table 6-2, 2012 NMED Risk Assessment Guidance.

CW - Construction Worker SSL

Ind/Occ - Industrial/Occupational SSL

mg/kg - Miligrams per kilogram

NMED - New Mexico Environment Department

SSL - Soil Screening Level from Table A-1 or Table 6-2, 2012 NMED Risk Assessment Guidance

TPH - Total Petroleum Hydrocarbons

µg/kg - Micrograms per kilogram

# Table 2 - Summary of Soil Analytical Results Compared to OCD RALs West Loading Rack Fuel Oil Spill Response

	Sample ID	East 1st Bay	East 2nd Bay	East 3rd Bay	East 3rd Bay #2	Site#1 - 2nd Bay	Site#2 - 2nd Bay	Site#3 - 2nd Bay	Site#4 - 2nd Bay
	Sample Location	Spot #1 Between 958 & 959	Spot #2 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 957 & 958	Spot #3 Between 957 & 958	Spot #2 Between 957 & 958	Spot #1 Between 957 & 958
	Date:	7/11/2013	7/11/2013	7/11/2013	7/11/2013	7/16/2013	7/16/2013	7/16/2013	7/16/2013
Analyte	OCD RAL								
Total Petroleum Hydrocarbons	(mg/kg)								
TPH - Gasoline Range Organics	1.00E+02	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.15
TPH - Diesel Range Organics	1.00E+02	14	< 1.7	3.5	< 8.5	4.0	23	14	1,200
Volatile Organic Compounds (µ	ıg/kg)								
Benzene	1.00E+04	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Xylenes		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BTEX	5.00E+04	ND							

#### Indicates detection above screening value.

Bold font indicates detection above the laboratory reporting limit.

Sample locations are described by the spot number within the loading rack (see Figure 3) and the railroad tracks between which the sample was collected.

RALs were determined for a soil with a ranking score greater than 19 as described in Section IV of OCD's Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993).

BTEX is calculated as the sum of the benzene, toluene, ethylbenzene and total xylenes concentrations. If all BTEX compounds were not detected above the laboratory reporting limit, a ND is shown.

mg/kg - Miligrams per kilogram

ND - non-detect (only for BTEX)

OCD - New Mexico Oil Conservation District

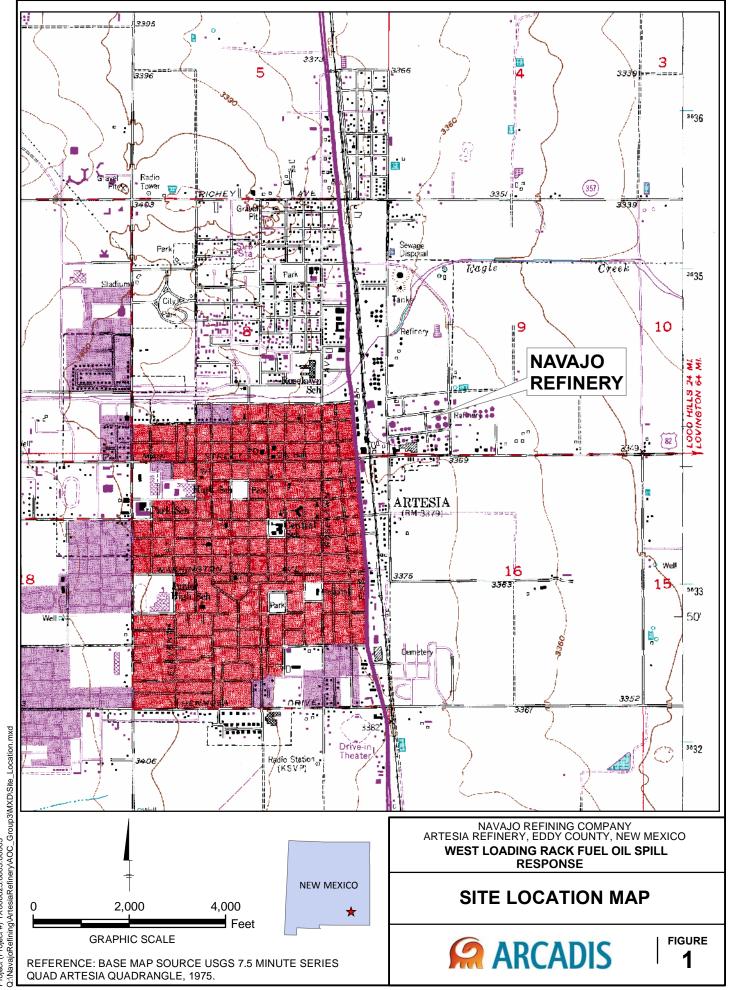
RAL - Remediation Action Level

TPH - Total Petroleum Hydrocarbons

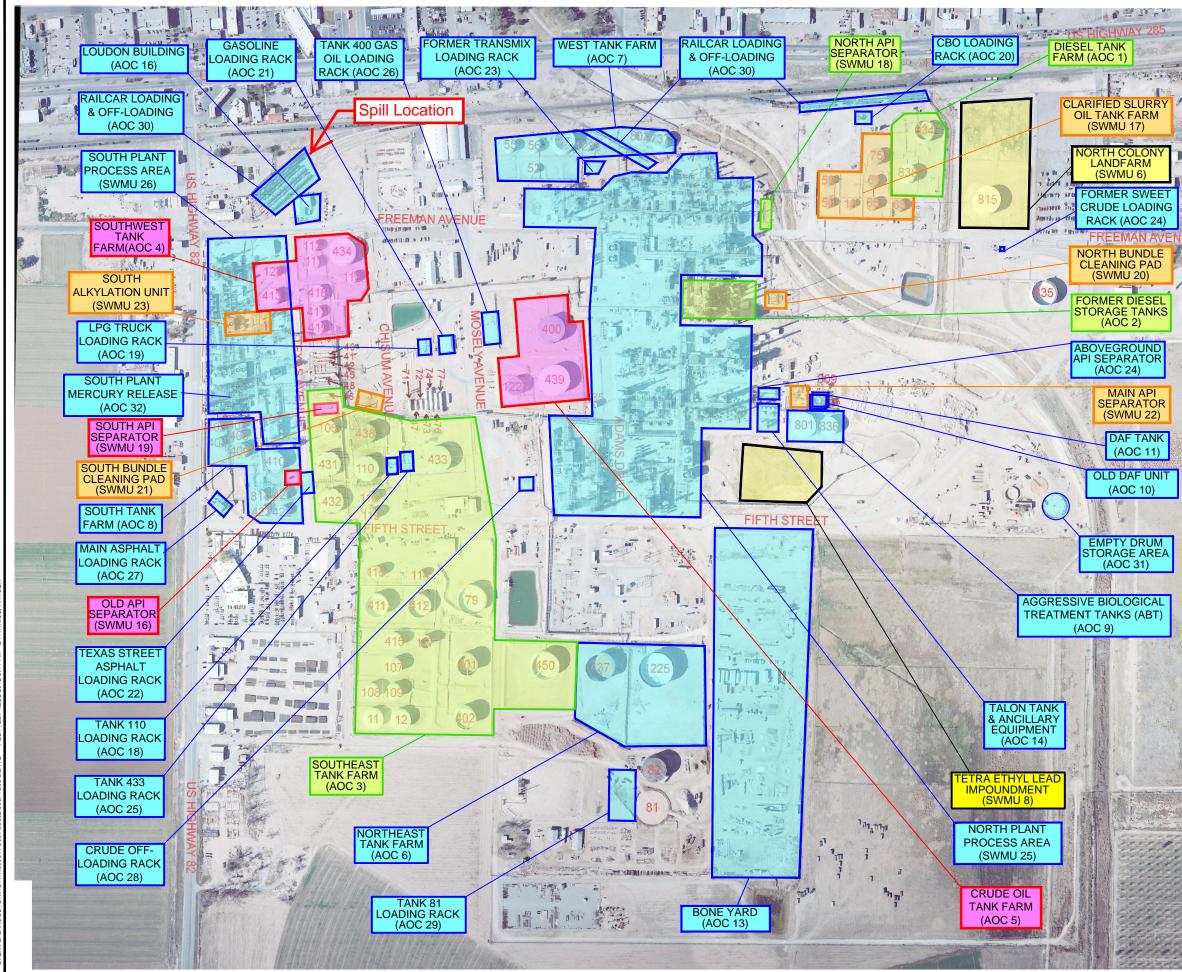
µg/kg - Micrograms per kilogram

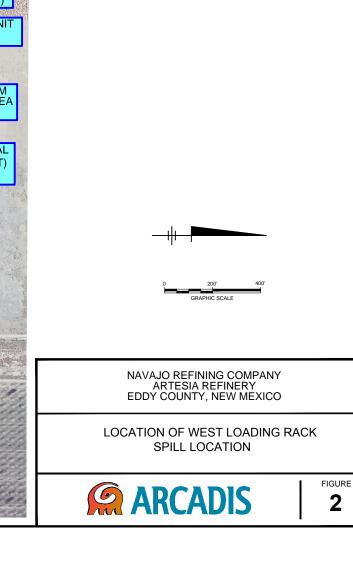


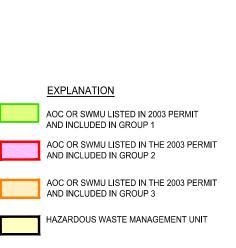
Figures



CITY: SF DIV/GROUP: ENV/IM DB: K ERNST LD: S KELLY PIC: PM: TR: Project (Project #) TX000825.0003.00003 Q:\NavajoRefining\ArtesiaRefineryAOC_Group3\MXD\Sfie_Location.mxd

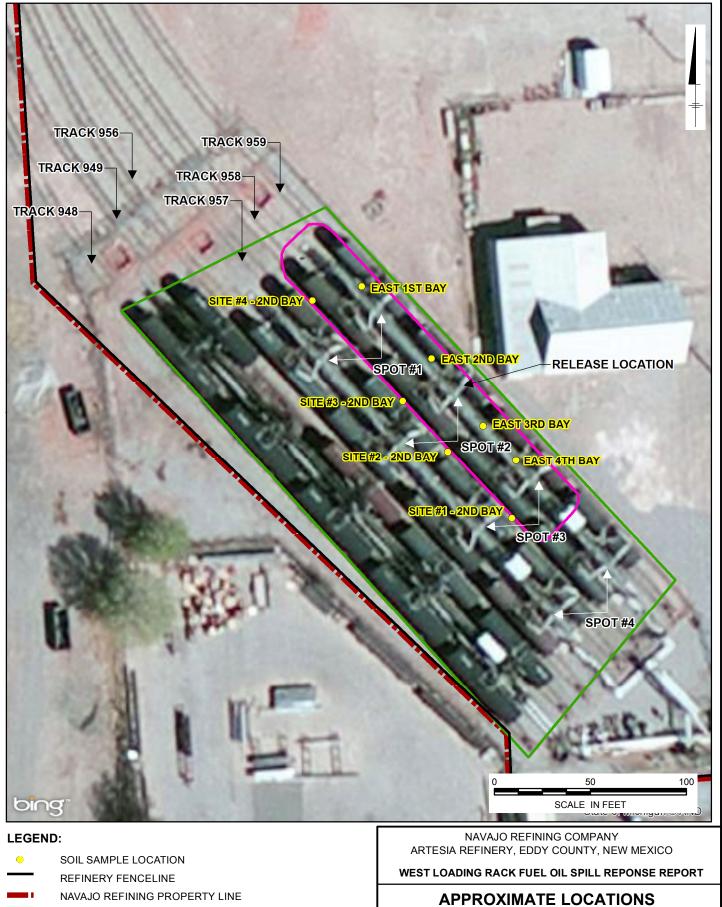






a second second second

AOC OR SWMU ADDED IN 2010 PERMIT MODIFICATION



- AOC 30 BOUNDARY
  - APPROXIMATE RELEASE AREA LIMITS

**ARCADIS** 

**OF SOIL SAMPLES** 

FIGURE

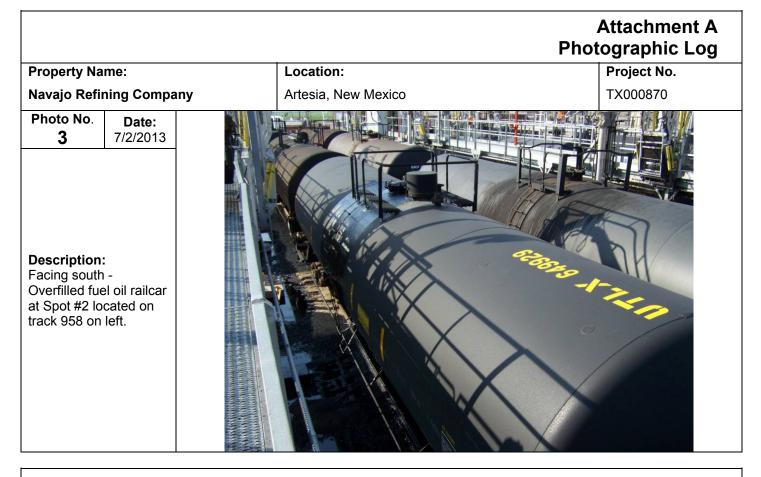


Attachment A

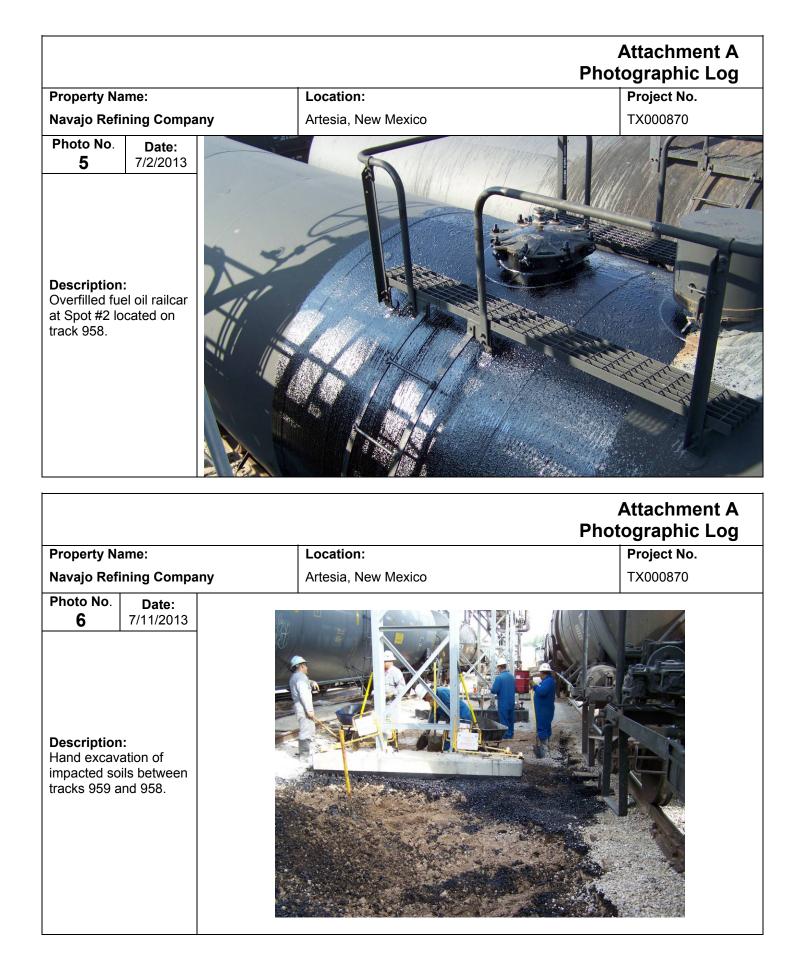
Photographic Log

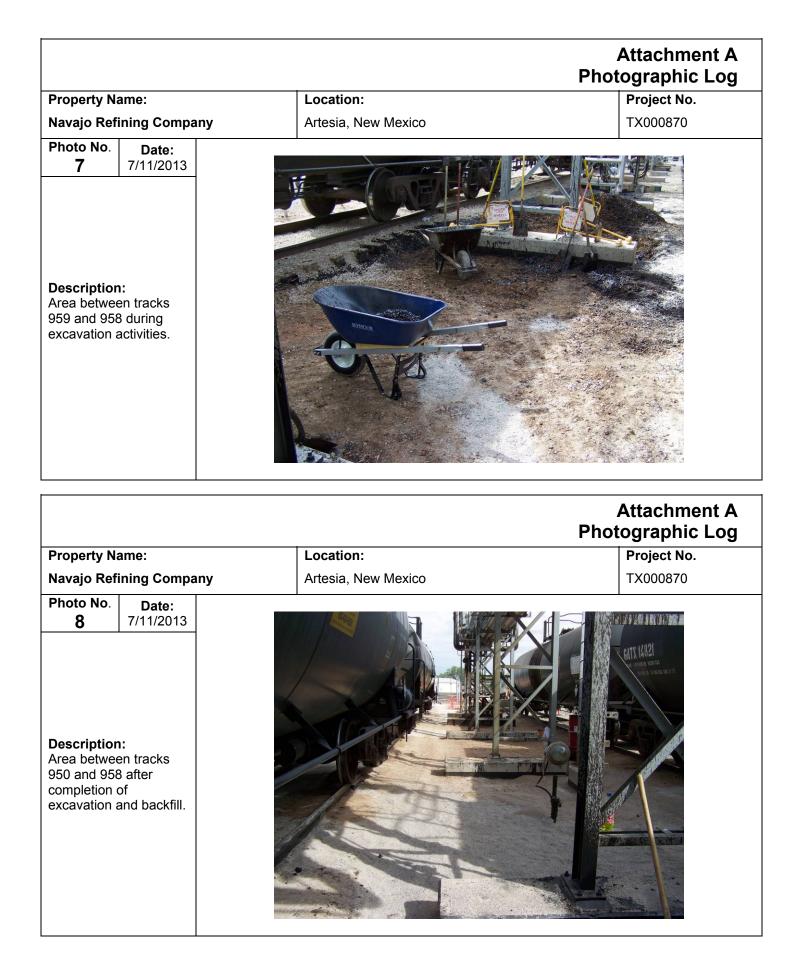
			Attachment A Photographic Log
Property Na	ame:	Location:	Project No.
Navajo Refi	ning Company	Artesia, New Mexico	TX000870
Photo No. 1	Date: 7/2/2013		
<b>Description</b> Facing south Spot #1 - Fur spilled betwe 959 on left a 958 on right.	neast at el oil een track nd track		

		Attachment A Photographic Log
Property Name:	Location:	Project No.
Navajo Refining Company	Artesia, New Mexico	TX000870
Photo No.       Date:         7/2/2013         Description:         Facing southeast at         Spot #1 - Fuel oil         spilled between track         958 on left and track         957 on right.		



Attachme Photographic						
Property Name:	Location:	Project No.				
Navajo Refining Company	Artesia, New Mexico	TX000870				
Photo No.     Date:       4     7/2/2013   Description: Impacted soils between tracks 959 and 958.	<image/>					



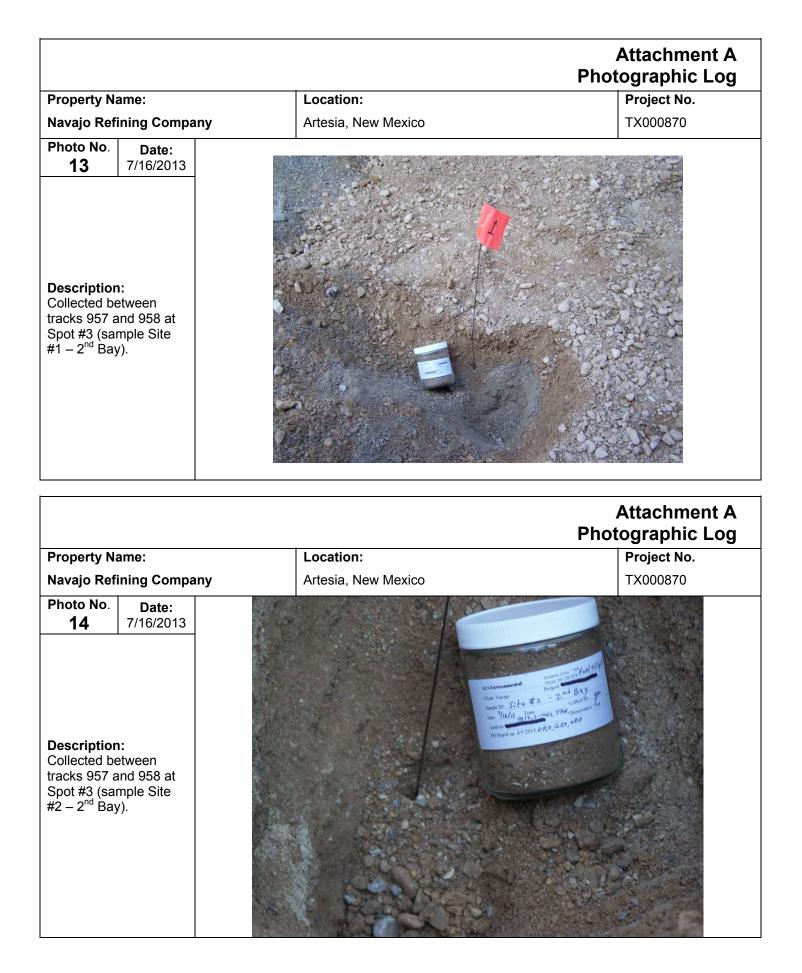


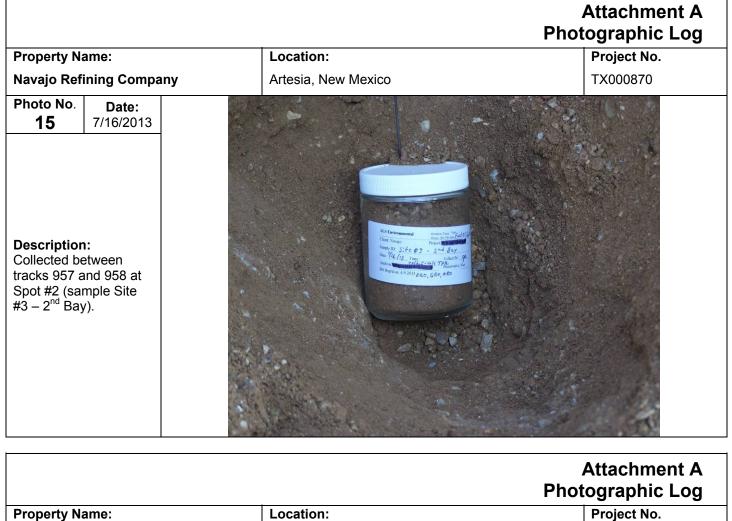
			Attachment A Photographic Log
Property Name	:	Location:	Project No.
Navajo Refining	g Company	Artesia, New Mexico	TX000870
	58 and 1		

		Attachment A Photographic Log
Property Name:	Location:	Project No.
Navajo Refining Company	Artesia, New Mexico	TX000870
Photo No. 10     Date: 7/11/2013       Description: Soil sample collected between track 958 and 959 from Spot #2 (sample East 2 nd Bay).		

			Attachment A Photographic Log
Property Na	ame:	Location:	Project No.
Navajo Refi	ining Company	Artesia, New Mexico	TX000870
Photo No. 11	<b>Date:</b> 7/11/2013		
<b>Description</b> Soil sample between trac 959 from Sp (sample Eas	collected ck 958 and oot #3		

			Attachment A Photographic Log
Property Na	ame:	Location:	Project No.
Navajo Ref	ining Company	Artesia, New Mexico	TX000870
Photo No. 12 Description Soil sample between tra 959 from Sp (sample Eas #2).	collected ck 958 and oot #3		





Navajo Refining Company

Date:

Photo No.

16

Artesia, New Mexico

**Project No.** TX000870

**Description:** Collected between tracks 957 and 958 at Spot #1 (sample Site  $#4 - 2^{nd}$  Bay).

 7/16/2013

 ween ad 958 at ple Site



Attachment B

Final C-141 Incident Report

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Sana PC, TNN 07505									
<b>Release Notification and Corrective Action</b>									
<b>OPERATOR</b> Initial Report Final Report									
Name of Company Navajo Refining Company	, L.L.C. (	Contact Robe	ert Combs						
Address 501 E. Main St, Artesia, NM 88210	Т	Felephone No.	575-746-5382						
Facility Name Artesia Refinery	F	Facility Type	Petroleum Refiner	у					
Surface Owner	Mineral Owner			API No.					

# LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

# Latitude <u>32°50'37.36"N</u> Longitude <u>104°23'45.76"W</u>

# NATURE OF RELEASE

Type of Release Fuel Oil	Volume of Release ~150 bbl	Volume Re	ecovered $\sim 30$ bbl		
Source of Release Rail loading area	Date and Hour of Occurrence		lour of Discovery		
	07/01/2013 at ~17:15	07/01/2013	at ~17:30		
Was Immediate Notice Given?	If YES, To Whom?				
🛛 Yes 🗌 No 🗌 Not Required	OCD Santa Fe, Carl Chavez, left m	lessage			
	OCD Artesia, Randy Dade				
	NMED Santa Fe, Ruth Horowitz (S	Spill Hotline),	left message		
By Whom? Mike Holder/Robert Combs	Date and Hour 7/1/13 at ~17:40	)			
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.			
🗌 Yes 🖾 No					
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
At ~17:30 on 07/01/13, it was reported that a rail car had been overtoppe					
had inadvertently begun to fill one railcar instead of the two he had plann					
operator noticed the spill, he immediately shut down the transfer pump as		impacted area	a is located along the rail		
loading racks and was approximately 200 feet long by 30 feet wide (see l	Figure 3 in the Spill Response Letter).				
Describe Area Affected and Cleanup Action Taken.*					
The spill was contained between the two rails and some small containme					
approximately 30 bbls of the spilled product. Approximately 156 cubic y					
hazardous waste facility between July 9 and 19, 2013. Soil samples were	e collected after excavation activities w	vere complete	d and the results are		
summarized in Tables 1 and 2 in the Spill Response Letter.					
I hereby certify that the information given above is true and complete to					
	e notifications and perform corrective actions for releases which may endanger				
	the NMOCD marked as "Final Report" does not relieve the operator of liability				
should their operations have failed to adequately investigate and remedia					
or the environment. In addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of response	sibility for co	mpliance with any other		
federal, state, or local laws and/or regulations.					
	OIL CONSERVATION DIVISION				
Signature: Which					
	Approved by Environmental Specialis	st:			
Printed Name: Robert Combs					
Title: Environmental Specialist	Approval Date:	Expiration D	ate:		
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached		
Date: 10/31/2013 Phone: 575-308-2718					

* Attach Additional Sheets If Necessary



Attachment C

Waste Manifests



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

Max(ma)

# PERMIAN BASIN REGION

Bill To:NAVAJOLease:ARTESIA YARDCompany/Generator:NAVAJOWell:W LOADING RACKCompany Man:MIKE HOLDERRig:Trucking:S BROTHERSPO:Date:7/9/2013Driver:JOSH3rd Party Ticket:105509Vehicle:1
Company/Generator:NAVAJOWell:W LOADING RACKCompany Man:MIKE HOLDERRig:Trucking:S BROTHERSPO:Date:7/9/2013Driver:
Company Man:MIKE HOLDERRig:Trucking:S BROTHERSPO:Date:7/9/2013Driver: JOSH
Trucking:S BROTHERSPO:Date:7/9/2013Driver: JOSH
Date: 7/9/2013 Driver: JOSH
3rd Party Ticket: 105509 Vehicle: 1
Product Quantity Area Description
Contaminated Soil (RCRA Non-Exempt) 12.00 yards 50/51
Generator Contribution Statument of Waste Statuated and the status of th
I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July
1988 regulatory determination, the above described waste is:
Pool (guidanty determination, the above determined and an application and production operations and are not mixed with non-event
_ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt
waste.
X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by
characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as
amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

____MSDS Information ____RCRA Hazardous Waste Analysis ____Process Knowledge ____Other (Provide description above)

 Test Gauge
 Inches

 1st Guage
 BS & W/BBLS Received

 2nd Guage
 Free Water

 Received
 Total Received

CPLASE PRINT       Num       Non-         Operator No.       N/A       No.10.5509         Operator No.       S25-748-311         Of Baad Abdris       Completion FlagTow and No.         Operatowand State Completion Abdrin No.	BBGG	N	EW MEXICO NON-H	AZARDOUS OI		E MANIFEST	_ Company Ma	n Contact Informati
Operation No.       N/A       Location of Origin Dependences Name       No.1 () 5 5 0.9         Operation No.       Nava 30 0. Ref fining Co. LLC       Location of Origin Dependences Name       No.1 () 5 5 0.9         City, Sate, Zip       Art Finis La, NM 88211-0159       Ref None Ano.       N/A         Phone No.       575-7.7.8.8-3311       Art No.       Ref None Ano.         Of Boad Made       Completion Production       Completion Production       Completion Production         Of Boad Made       Completion Production       Completion Production       Completion Production         Of Boad Made       Completion Production       Completion Production       Completion Production         Writer Bland Change       Completion Production       Completion Production       Completion Production         Writer Bland Change       Completion Production       Completion Production       Completion Production         Writer Bland Change       Completion Production       Completion Production       Completion Production       Completion Production         Writer Bland Change       Completion Production       Production       Completion Production       Completion Production         Writer Bland Change       Completion Production       Production       Completion Production       Completion Production       Completion Production         <	Intransmuterial			(PLEASE PRIM	п)	1 - 1		_ <del></del> ,
			C BALLET	1999 - 1999 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		NO.		
Operators man       R42V330       R42V330       R42V330       R42V330         Acciers       PC Box 159       Contriv       Art 0 e 1a, NM 85211-0159       Contriv         Act 0 e 1a, NM 85211-0159       Righten e 80.       Art 0 e 1a, NM 85211-0159       Art 0 e 1a, NM 85211-0159         Oll Band Mate       State 329       Contriv       Art 0 e 1a, NM 85211-0159       Art 0 e 1a, NM 85211-0159         Oll Band Mate       Control on Mate 10 and 10				on an an Array and a			T02208	
Control of the state of the st	perucora manie		LLC		•			
City, State, 20;       AT E 6 \$ 1.8, NN 88211-0159       AF I 6 \$ 1.8, NN 88211-0159         City, State, 20;       State, 20;       No.       State, 20;         Ol Size Additional State       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Vieta Based Outring       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Produced Formation Solids       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Self Continuity Solids       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Self Continuity Solids       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Self Continuity Solids       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         Self Continuity Solids       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         MASTE GENERATION PROCESS:       Completion Fluid/Flow Spletability       Completion Fluid/Flow Spletability         MASTE GENERATION PROCESS:       Completability       Plant Spletability         Master Generation Spletability       B - BARNELS       L- LOUID       12       Y - VANOS         Master Generation Spletability       B - BARNELS       L- LOUID       12       Y - VANOS         Master Genetra Controper Spletability	ddress <u>r</u> O	BOX 109				N/A	· · ·	
Phone No. 575=748=3311  AFF/PO No.   Phone No.  ST5=748=3311  AFF/PO No.   Watched Water (Non-Injectable)  Completion File(//row basis (Non-Injectable)  File(Xasisat())  Completion File(//row basis (Non-Injectable)  Completion File(//ro	ity, State, Zip Art	esia, NM 88211-01	59					
Oil Bared Cuttings       Wathout Water (Non-Injectable)       Wathout Water (Non-Injectable)       Completion Fillod/Flow water (Noetable)         Water Based Music       Completion Fillod/Flow water (Noetable)       Completion Fillod/Flow water (Noetable)       Completion Fillod/Flow water (Noetable)         Start Action       Start Action       Start Action       Completion Fillod/Flow water (Noetable)         Start Action       Start Action       Completion Fillod/Flow water (Noetable)       Gathering Line Water (Water (Injectable)         Start Action       Start Action       Completion Fillod/Flow water (Noetable)       Gathering Line Water (Water (Injectable)         Start Action       Start Action       PRODUCTION       CATHERING LINE         Start Action       Start Action       Process select from Noe-Exempt Waste Line control       Process select from Noe-Exempt Waste Line control         WAST GENERATION PROCESS:       DRILLING       Control       Process select from Noe-Exempt Waste Line control       Action Start Action Action Start Action Action Start Action Action Start Action Act		5-748-3311					· · · · · · · · · · · · · · · · · · ·	
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Produced Formation Solids  Gathering Line Water/Waste (Non-Injectable)  Gathering Line Water/Waste (Injectable)  Gathering Line Water/Waste (Injectable)  Gathering Line Water/Waste (Injectable)  Gathering Line Water/Waste (Injectable)  Truck Washeut (seempt waste)  Gathering Line Water/Waste (Injectable)  WASTE GENERATION PROCESS:  DRILLING  DRILLING  COMPLETION  PRODUCTION  GATHERING LINE  Non-Esterpt Other  Solid Contraining d Sol  Gathering Line Water/Waste (Injectable)  Waste Case of the Resource Conservation and Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above Recovery Act (REAA Bater)  Contract Non-OLERANCE  Recover Non-OLERANCE  Act EXEMPT: Of End waste waste is administic at Bateria advert Water Analysis Prior Approval Dottain Line d  Carrie Hermandez  Entergence non-haradow, provelified waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazadow  Carrie Hermandez  Prove District Safety Carries Faste Services, Tuc. Prior Approval  Severation  Carrie Hermandez  Prove Non-OLERANCE  Severation  Carrie Hermandez  Prove Ro. S75-748-1213  Severation  ConversionMan Adverse Recoversion  Non-Recoversion and Receiption of the waste nucl accompany	*			-injectable)		Completion Fluid/Flow b	ack (injectable)	
Tark bottom Sak Piert Wate MASTE GENERATION PROCESS DRILLING DRILLING DRILLING ORDERATION PROCESS DRILLING COMPLETION PRODUCTION GATHERING LINE Solid Contraining - fuel Non-Exempt Value	-							·
Gas Plant Waste							A HYDRY AND	a saya an
Non-Exempt Other       Soil Containing - free       Ot /       *please select from Non-Exempt Waste List on back Unit W // ////////////////////////////////	•	(100K N	ashout (exempt waste)					
QUANTITY       B - BARRELS       L - LIQUID       12       Y - YARDS       E         Indersby cartify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above desc cards [Check the appropriate dassification)       Oil Relative sense senserved from oil and gas exploration and production operations and are not mixed with non-exempt waste (RSGA Accepts certific month only)       Oil Relative sense to accept the the non-hazardous that does not exceed the minimum standards for weste hezardous by characteristics established in RCRA reg. 2012.12:61.2, or US to liad vaste as well as doing ob ye OCFA, pert 261, subpart 0, as amended. The following documentation demonstrating the w hazardous is attached. (Check the appropriate lenns as provided)       Other (Provide Description Below)         Prior Approval Obcained       Other (Provide Description Below)       Prior Approval Obcained       Other (Provide Description Below)         Carrie Hernandez Present Aumoution and a description of the waste must accompany this form)       Carrie Hernandez       Onther Statest (the order, documentation of non-hazardou somution)         Variantion       SB rothers Waste Services, Tuc.       Driver's Name         Name       SB rothers Waste Services, Tuc.       Driver's Name         Address       512 W. Texas Ave.       Prior Non- 575-748-1213       Track Non- 7-9.2013       Driver's Name         Inclease of the Master of Humit Statest of the Master of the Statest of Check one)       Statestable dolow. 7-9.2013       Drive	VASTE GENERATION P	ROCESS: DRILLIN	G 🗌	COMPLETION		PRODUCTION	GATHERI	NG LINES
QUANTITY       B - BARRELS       L - LIQUID       12       Y - YARDS       E         Ih oreby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above desc inded E (Check the appropriate dassification)       O       If the divestes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (RS60 Accepts certific month only)       O       If Ref waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA reg. 2612.126.12, 40, 40 res.       O       If Ref waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA reg. 2612.126.12, 40, 100 res.         Image:       O II field waste which is non-hazardous waste as defined by 40 CFA, part 261, subpart 0, as amended. The following documentation demonstrating the w hazardous is a tabached. (Check the appropriate lennes as provided)       O there (Provide Description Below)         Prior Approval Obtained       Emergency non-hazardous mon-official waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardou determination and a description of the waste must accompany this form)       O there (Provide Description Below)         Carrie Hernandez (Premi Aunocetto Admin Scauthus:       Onther Swate Less Safety (the order, documentation of non-hazardou determination and a description of the waste must accompany this form)       D where Safety (the order, documentation of non-hazardou determination and a description of the waste must accompany this form) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
	on-Exempt Other	Soil Containi	1g - Fuel	oil	*please select fi	rom Non-Exempt Waste Li	st, on back Unit	V LOADING,
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Ioad B [Check the appropriate dassification]       *         B ACRA EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exercipt waste (R360 Accepts certification month only)         IX       RCRA NON-EXEMPT:       Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hezardous by characteristics established in RCRA regulation demonstrating the whazardous is attached. (Check the appropriate items as provided)         IX       RCRA NON-EXEMPT:       Oil field waste which is non-hazardous waste as defined by 40 CFR, part 251, subpart D, as amended. The following documentation demonstrating the whazardous is attached. (Check the appropriate items as provided)         IX       MSDS Information       Information       Information         IX       Prior Approval       Dther [Provide Description Below]         IX       Prior Non-OilField waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous, non-milifield waste must accompany this form)       Carrie Hermandez         Carrie Hermandez       exert       Southing:         Years       Site Safet S	hereby certify that accord	ing to the Resource Conservation and	Recovery Act (RCRA) and	d the US Environme	ental Protection A	gency's July 1988 regulator	y determination, the at	oove described waste
RCMA EXEMPT:       month only         MICRA NON-EXEMPT:       OIf field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulation of the standards for waste hazardous by characteristics established in RCRA regulation of the standards is attached. (Check the appropriate items as provided)         Image: Information Image: Information Image:		ate classification)						÷ .
26121-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste and analysis       26121-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste analysis         MisDS Information       All RCRA Hazardous Waste Analysis       Other (Provide Description Below)         Prior Approval Obtained       Emergency non-hazardous, non-olfielid waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous determination and a desciption of the waste must accompany this form)       Carrie Hernandez         Carrie Hernandez       ent       Signature         Image: Strothers Waste Services, Inc.       Driver's Name         Address       512 W. Texas Ave.       Print Name         Artesta, NM 88210       Phone No.       Tronsporter's         Name       575-748-1213       Trok No.         It hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-9.2013         It hardway facility / NML-COG       Phone No.       575-393-1079	RCRA EXEMPT:	-	rom oil and gas exploratio	on and production	operations and an	e not mixed with hon-exem	pt waste (R360 Accept	s certifications on a per
hazardous is attached. (Check the appropriate items as provided)       Other (Provide Description Below)         Prior Approval Obtained       Other (Provide Description Below)         Prior Approval Obtained       Check Hasardous Waste Analysis       Other (Provide Description Below)         Prior Approval Obtained       Emergency non-hazardous, non-olifield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous, non-olifield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous)         Carrie Hernandez       Outer       Samuel Safety (the order, documentation of non-hazardous)         Transporter's       Name       Samuel Safety (the order, documentation of non-hazardous)         Name       SBrothers Waste Services, Inc.       Driver's Name         Address       512 W. Texas Ave.       Print Name         Attesta, NM 88210       Phone No.       Track No.         Phone No.       575-748-1213       Truck No.         It hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-9.2013         Samuer Ante       Durvers scenature       Durvers scenature         IN:       OUT:       Durvers scenature       Durvers scenature         Name/No.       575-393-1079       Name/No.       YES	X RCRA NON-EXEMPT	• •						
MSDS Information       RCRA Hazardous Waste Analysis       Other (Provide Description Below)         Prior Approval Obtained       Other (Provide Description Below)         EMERGENCY NON-OILFEILD:       Emergency non-hazadous, non-oilfeild waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazadou determination and a desciption of the Waste must accompany this form)       Carrie Hernandez         Immergiate Manager State Services, Inc.       Other's Name         Name       States Ave.       Print Name         Address       512 N. Texas Ave.       Print Name         Artesia, NM 88210       Phone No.       Transporter's Name         Phone No.       575-748-1213       Truck No.         I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed bolow.       7-9.2013         Summer       Durkers scienture       Durkers wast       Durkers wast         IN:       OUT:       Durkers wast       Durkers wast         Ste Rame/       Permit No.       575-393-1079         Mile Marker 66 Hwy 50/120 Carlsbad, NM 88220       Nord Master 50 micro roentgens? (dircle one)       YES         Norme RADINGS TakEN? (Circle One)       YES       No       (YE) was reading > 50 micro roentgens? (dircle one)       YES         Yest <td< td=""><td></td><td></td><td></td><td></td><td>l, subpart D, as an</td><td>nended. The following docu</td><td>imentation demonstrat</td><td>ing the waste as non-</td></td<>					l, subpart D, as an	nended. The following docu	imentation demonstrat	ing the waste as non-
EMERGENCY NON-OILFEILD:       Emergency non-haradous, non-oilfeild waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardou determination and a desciption of the waste must accompany this form)       Carrie Hernandez         OPRIMY AUMORZED AGENTS SCHAFURE       OATE       Scient Termination and a desciption of the waste must accompany this form)         Transportar's       OATE       Scient Termination and a desciption of the waste must accompany this form)       Carrie Hernandez         Transportar's       Strothers Waste Services, Iuc.       Driver's Name       Scient Termination         Address       512 W. Texas Ave.       Print Name       Tuck No.         Artesia, NM 88210       Phone No.       Truck No.       Intereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed bolow.       7-9.2013       Deliver's OAT         SHEPMENT DATE       DUTI:       DELIVENT DATE       DELIVENT DATE       DERIVERT SCIENTIFIE         Ste Name/       OUT:       DUTI:       DELIVENT DATE       DELIVENT DATE       DELIVENT DATE         NORM READINGS TAKENY (Circle One)       YES       KO       (YES, was reading >50 micro roentgens? (circle one)       YES         PASS THE PAINT FRITER TEST? (Circle One)       YES       KO       YES       YES       YES       YES		a manufa	***			Other (Provide Descripti	on Below)	÷.
EMERGENCY NON-OILPELLI:       determination and a desciption of the waste must accompany this form)       Carrie Hernandez         Definition       Carrie Hernandez		· · · · · · · · · · · · · · · · · · ·					·····	
Carrie Hernandez       Some Hernandez         Date       Some Hernandez         Transporter's       SBrothers Waste Services, Tuc.       Driver's Name         Transporter's       Driver's Name         Address       Driver's Name         Address       Diver's Name         Tuck No.       Diver's Name         Phone No.       Transporter's Stellard above and delivered without incident to the disposal facility listed below.         Thereby Carting Dave       Divers Signature         Signature       Divers Signature         Truck No.       Truck No.         Signature       Divers Signature         TRUCK TIME STAMP         Invers Signature       Phon	EMERGENCY NON-C					of Public Safety (the order,	documentation of non	-hazardous waste
UPBRITY AUTHORIZED AGENTS SCINATURE     DATE     -SIGNATURE       Transporter's Name     SBrothers Waste Services, Tuc.     Driver's Name       Address     512 W. Texas Ave.     Print Name       Artesta, NM 88210     Phone No.       Fhone No.     575-748-1213       I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       TRUCK TIME STAMP       IN:     DBIVERS SIGNATURE       TRUCK TIME STAMP       IN:     OUT:       SHE Name/       Permit No.       Halfway Facility / NM1-006       Permit No.       Halfway Facility / Staten 7 (Circle One)       YES       NORM READINGS TAKEN? (Circle One)       YES       Ist Gauge	Carrie Her				, , , , , , , , , , , , , , , , , , ,	Carris	2 Herra	net
Name     SBrothers Wasce Services, Itc.     Driver's Name       Address     512 W. Texas Ave.     Print Name       Artesia, NM 88210     Phone No.       Phone No.     575-748-1213       Truck No.     Truck No.       I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       TRUCK TIME STAMP       IN:     OUT:       ShapMent DATE       Datvers signature       TRUCK TIME STAMP       IN:     OUT:       ShapMent No.       Halfway Facility / NM1-006       Permit No.       Halfway Facility / NM1-006       Permit No.       Halfway Facility / NM1-006       Pass THE PAINT FRITEA TEST? (Circle One)       YES       Norw READINGS TAKEN? (Circle One)       YES       Ist Gauge			Wastime with the barrier of the	in stand with the stand of the stand	DATE		SIGNATURE	<u>م</u>
Name     SBrothers Waste Services, Inc.     Driver's Name       Address     512 W. Texas Ave.     Print Name       Artesia, NM 88210     Phone No.       Phone No.     575-748-1213       Truck No.     Truck No.       SHEPMENT DATE     DRIVER'S SIGNATURE       TRUCK TIME STAMP     DRIVER'S SIGNATURE       IN:     OUT:       SHEPMENT DATE     DRIVER'S SIGNATURE       TRUCK TIME STAMP     RECEIVING AREA       IN:     OUT:       SHEPMENT No.     Halfway Facility / NM1-006       Address     Mile Marker 66 Hwy §2/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)     YES       PASS THE PAINT FILTEA TEST? (Circle One)     YES       Ist Gauge     BS&W/BBLS Received								
Artessia, NM 88210       Phone No.         Freeby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       Image: Truck No.         I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       Image: Truck No.         SHIPMENT DATE       DRIVER'S SIGNATURE       Image: Truck No.         IN:       OUT:       DELIVERY DATE         IN:       OUT:       Name/No.         SHIPMENT Role       Free Hury 52/(180 Carlsbad, NM 88220         NAddress       Mile Marker 66 Hwy 52/(180 Carlsbad, NM 88220         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES         Ist Gauge       BS&W/(BBLS Received)       BS&W/(%)	Q1	rothers Waste Ser	vices, Inc.		Driver's Name		c	
Phone No.       575-748-1213       Truck No.         I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-9.2013         SHIPMENT DATE       DRIVER'S SIGNATURE       7-9.2013         TRUCK TIME STAMP       DRIVER'S SIGNATURE       DRIVER'S SIGNATURE         TRUCK TIME STAMP       RECEIVING. AREA         IN:       OUT:       Name/No.         Site Name/       Phone No.       575-393-1079         Mile Marker 66 Hwy 52/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)       YES         NORM READINGS TAKEN? (Circle One)       YES       NO         Yeet       Inches       858.W/68LS Received       BS8.W/6%L					Print Name	Jushus C	peeslin	
I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-9.2013         SHIPMENT DATE       DRIVER'S SIGNATURE       7-9.2013         DELIVERY DATE       DRIVER'S SIGNATURE       DRIVER'S SIGNATURE         TRUCK TIME STAMP       RECEIVING-AREA       Name/No.         IN:       OUT:       Name/No.       Name/No.         Stie Name/       Phone No.       575-393-1079         Permit No.       Halfway Facility / NM1-006       Phone No.       575-393-1079         NORM READINGS TAKEN? (Circle One)       YES       NO       (f YEs, was reading > 50 micro roentgens? (circle one)       YES         YEet       Inches       BS&W/BBLS Received       BS&W/BBLS Received       BS&W/(%)								
7-9.2013 DELIVERY DATE       DRIVER'S SIGNATURE       TRUCK TIME STAMP       IN:     OUT:       OUT:       Site Name/ Permit No.       Halfway Facility / NM1-006       Permit No.     Halfway Facility / NM1-006       Address     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)     YES       PASS THE PAINT FILTER TEST? (Circle One)     YES       Veet     Inches       1st Gauge     BS&W/BBLS Received     BS&W (%)	·						facility listed holow	0
TRUCK TIME STAMP       RECEIVING AREA         IN:       OUT:       Name/No.         Site Name/       Permit No.       Halfway Facility / NM1-006         Address       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES         Ist Gauge       BS&W/BBLS Received	hereby certify that the ab	ove named material(s) was/were pic	ed up at the Generator's	Site listed above a	7-9.		Joshul	: Ser
IN:       OUT:       Name/No.       With No.         Site Name/       Permit No.       Halfway Facility / NM1-006       Phone No.       575-393-1079         Address       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       Phone No.       575-393-1079         NORM READINGS TAKEN? (Circle One)       YES       NO       // YES, was reading > 50 micro roentgens? (circle one)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES       NO       // YES       // YES         Ist Gauge       BS&W/BBLS Received       BS&W (%)       // SS	SHIPMENT DATE	DRIVER'S S	IGNATURE		DELL		- Substantine and the substantion	
Site Name/       Permit No.       Halfway Facility / NM1-006       Phone No.       575-393-1079         Address       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)       YES       NO         NORM READINGS TAKEN? (Circle One)       YES       NO       /if YES, was reading > 50 micro roentgens? (circle one)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES       NO       /if YES, was reading > 50 micro roentgens? (circle one)       YES         1st Gauge       BS&W/BBLS Received       BS&W (%)       BS&W (%)	TRU					3	Land	AL 1
Permit No.     Halfway Facility / NM1-006     S75-393-1079       Address     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220     S75-393-1079       NORM READINGS TAKEN? (Circle One)     YES     NO       PASS THE PAINT FILTER TEST? (Circle One)     YES     NO       Feet     Inches     SS&W/BBLS Received     BS&W/BBLS Received	N:	OUT:				Name/No	). <u> </u>	<u>F_2/</u>
Address     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)     YES       PASS THE PAINT FILTER TEST? (Circle One)     YES       VO     (Feet       Inches     85&W/BBLS Received       BS&W/BBLS Received     BS&W (%)		Facility / NM1-006			Phone No.	575-393-1079		
PASS THE PAINT FILTER TEST? (Circle One) YES (10 Feet Inches 1st Gauge BS&W/BBLS Received BS&W (%)			220	· ·	· · · · · ·	· · · · · · · · · · · · · · · · · · ·		
PASS THE PAINT FILTER TEST? (Circle One) YES (NO / Feet Inches Ist Gauge BS&W/BBLS Received BS&W (%)	NORM REA	DINGS TAKEN? (Circle One) Y	is no	Ţ	If YES, was read	ding > 50 mlcro roentgens?	(circle one) YES	NO
1st Gauge BS&W/BBLS Received BS&W (%)	PASS THE PAIN	/T FILTER TEST? (Circle One)	YES	( s. (	NO /			
1st Gauge BS&W/BBLS Received BS&W (%)				S. A. F. M. Marker Marker				
	st Gauge	VFeet	Inches	<b>-</b> ·	B	S&W/BBLS Received	BS&W	(%)
	2nd Gauge			-				,
Received Iotal Received	leceived			- L	· · · · · · · · · · · · · · · · · · ·	I VIAI NEUAIVEA		
I hereby der dry triat the above load material has been (circle one): ACCEPTED DENIED If denied, why?	I hereby generative that the	above load material has been (circle	ACCEPTED	DENIED	If denied, why	p	57	
MARCH 1471 WILL SKA STAR		1 1	4-11	ull	<u> </u>	4	427	
NAME (PRINT) DATE TITLE SIGNATURE	NAME	(PRINT)	DATE		TITLE	1	SIGNATURE	1.
C-138	-138	, V				· · · · ·	ワレ	Version



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

(DUCERED DE LA

#### PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/9/2013	Driver:	JOSH
3rd Party Ticket:	105512	Vehicle:	1

Type of Watoriels			
Product	<u>Quantity</u>	<u>Area</u>	Description
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

**Generator Certification Storument of Waste Statue** I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

_____RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): ______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

#### Diver/Agone algoriture)

Lank Exitoms			
Feet	Inches		
1st Guage		BS &W/BBLS Received	BS & W
2nd Guage		Free Water	
Received		Total Received	

Market Level   Spentator No.   N/A   Spentator Norm   Navajo Refining Co. LLC   Market See String   PO Dox 159   Artesia, NM S8211-0159   Artesia, NM S8210   Artesia, NM S8210   A	<b>R360</b>		NEW MEXICO NO	ON HAZARDOUS OI		MANIFEST	<ul> <li>Company Mail</li> <li>Name</li> </ul>	n Contact Informatio
Series No. N/A Network of the fining Co. LLC Network of the series No. Network of the series No			· · · · · · · · · · · · · · · · · · ·	(PLEASE PRI	41 <b>)</b>			
Performance PD Box 139 PD Box 13	erator No.	N/A		All and a second s	Location of Origin	NO.	105512	
Artesis, NM 88211-0159     Artesis, NM 88211-015     Artesis, NM 88211-01     Artesis, NM 88210     Artesis, Artesis, Artesis, Artesis, Artesis, Artesis, Artesis, Artesis, Artesis, Ar	erators Name Nan		ng Co. LLC		Lease/Well Name & No.		l,	
Product Of Strate 2,575 - 748 - 3311         Prime No           IBard Multi         Prime No           IBard Multi         Completion Full/Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)           IBard Multi         Completion Full/Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)         Completion Full/Fox lock (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         IF Gradmail Multi Fox lock (Merculectable)         Fradework (Merculectable)           IF Gradmail Multi Fox lock (Merculectable)         IF Gradmail Multi Fox lock (Merculectable)         IF Gr			011 0150		-	N/.	A	<u>,,</u>
Hand Main Hand Main Hand Main Hand Karl Month Natr (Non-Hydrible) Hand Chriles Hand Hand Hand Hand Hand Hand Hand Hand	y, state, zip		211-0159	. <u> </u>	-	. <u>.</u>		
Issee Curtage are Based Multis Competion Solid are Based Multis Competion Solid Competion Solid Competis Solid Competion Solid Competion Solid Competion Solid Competio		<del>-/48-33[1</del>	−i∰≫rna i an i i i i i i i i i i i i i i i i		APE/PO No.		5 - AT 1. 45	
as Band Watter ASTE GENERATION PROCESS:  DRILLING  COMPLETION  PRODUCTION  GATHERING LINES  ASTE GENERATION PROCESS:  DRILLING  COMPLETION  PRODUCTION  GATHERING LINES  ASTE GENERATION PROCESS:  DRILLING  COMPLETION  PRODUCTION  GATHERING LINES  ANTITY  B-BARRES  L-UCUID  12 Y-RADS  E-EACH  areby certify that according to the Resource Contamation and Recovery Act (RCMA) and the US Environmental Protection Agency 3 July 1988 regulatory determination, the above described w ds (Cinck the appropriate databate torm)  RCA NON-EXEMPT:  OII field waste generated from oil and ges exploration and production operations and are not mixed with non-exempt waste (RSBA Accepts certification o menth only)  RCA NON-EXEMPT: OII field waste generated from oil and ges exploration and production operations and are not mixed with non-exempt waste (RSBA Accepts certification o menth only)  RCA NON-EXEMPT: OII field waste generated from oil and ges exploration and production operations and are not mixed with non-exempt waste (RSBA Accepts certification o menth only)  RCA NON-EXEMPT: OII field waste generated from oil and ges exploration and production operations and are not mixed with non-exempt waste (RSBA Accepts certification o menth only)  RCA NON-EXEMPT: OII field waste generated from oil and ges exploration and production operations and are not mixed with non-exempt waste (RSBA Accepts certification o menth only)  RCA NON-EXEMPT: OII field waste generation with the Been ordered by the Dispatcherent of Public Safety (the order, documentation of non-Astrandous watte method without method with ond-accepts and advectory of non-Astrandous watte method accepts and advectory on outside waste must accompany this form)  Cart of CHE TA and accepts of the waste must accompany this form)  Cart of CHE TA and accepts of the waste must accompany this form)  Cart of CHE TA and accepts of the waste must accompany this form)  Cart of CHE TA and accepts of the waste must accompany this form)  Cart of CHE TA and accepts of the waste must accompany	il Based Cuttings later Based Muds later Based Cuttings oduced Formation Solids	· · · ·	Completion Fluid/Flow back Produced Water (Non-Inject	: (Non-Injectable) table)		Completion Fluid/Flow t Produced Water (Injecta	ble) pack (injectable) ible)	
an Exempt Other Soll Containing -Fuel Prices select from Non-Exempt Wente Like on book Unit Work on book Unit Work of the Analysia selection of the Analysia Lucion of the Analysia Lucion Agency's July 1988 registery destroy destroy have described with non-exempt waste (RSD Accepts certifications on month only and sease selection agency's July 1988 registery destroy destroy have described with non-exempt waste (RSD Accepts certifications on month only and sease selection agency's July 1988 registery destroy have described with non-exempt waste (RSD Accepts certifications on month only and sease selection agency's July 1988 registery destroy destroy have described with non-exempt waste (RSD Accepts certifications on month only and sease selections and production operations and are not model with non-exempt waste (RSD Accepts certifications on month only and sease selections and production operations and are not model with non-exempt waste (RSD Accepts certifications on month only and sease which is non-bazardous that does not accept the minimum standards for waste heractoristics established in RCA registering to waste waste as defined by 40 CFR, part 221, subport D, as amended. The following documentation demonstrating the waste as heractoristics waste and heractory into Araredous waste and acceptory non-farradious, non-olfeid waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste and acceptory into Araredous, non-olfeid waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste and acceptory its form)  Generic Assesses and the above rank of sate and the sectory of the safet sectory of the order of the documentation of non-hazardous waste and acceptory its form)  Generic Assessessesses  Final Artesian Acceptory and the Safety lated above and dehered without incident to the disposal facility lated below.  Final Artesian Acceptory and the Safety lated above and dehered without incident to the disposal faci			Truck Washout (exempt was	ste) · · ·			· ·	· · · · · · · · · · · · · · · · · · ·
LAMITY  B - BARRELS L - UQUID  12 Y - YARDS E - EACH  ardby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described w als (Cleck the appropriate distillation)  ARCA REMPT: OII field waste generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on month only)  ARCA NON-EXEMPT: OII field waste generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications or month only)  ARCA NON-EXEMPT: OII field waste generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications or solid Lass 24, or Itel haardous waste as defined by 40 CFR, part 221, subpart D, as annoted. The following documentation demonstraining the waste as haardoous by characteristics established in RCRA Network  PTOT Approval Obtained  MISI RCRA NON-OUFEDD: Emergency non-baradous, non-official waste that has been ordered by the Department of Public Safety (the order, docupentation of non-haardous wast haardoous had ad deciption of the waste must accomany this form) Carris Lerandazz  Artesia, NM 88210 Thom Non STS 575-748-1213 Truck NM  RECEIVING AREA  Non Non Non Non Non Non Non Non Non No		CESS:	DRILLING			PRODUCTION	GATHERIN	NG LINES
UNMITTY       B - BARRES       L - UQUID       12       y - YARDS       E - EACH         aredy sertify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described wasts (RCRA New Act, RCRA XEMPT)       Off field wasts generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on month only)       In RCRA NEW PT:       Off field wasts generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on month only)       In RCRA NON-EXEMPT:       Off field wasts generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications waste as a defined by 450 CFR, part 261, subject D, as annehold. The following documentation demonstraining the waste as a back object in the appropriate litems as provided)         MARCEA NON-OLFEDID       Emergency: non-harardous, non-filed waste that has been ordered by the Department of Public Safety (the order, docupentation of non-hazardous wast accepton and the certification of non-hazardous wast accepton and the certification of a docupton of the waste must accepton and the certification waste and the set of the non-second addiction of the waste set as a defined waste waste that has been ordered by the Department of Public Safety (the order, docupentation of non-hazardous waste are and material back object in the waste set as a defined waste waste accentered by the CFR, part 261 Marce and the certification of non-hazardous waste are and material back object in the waste set as a defined waste waste accentered by the CFR, part 261 Marce and the certerification of non-hazardous waste accenter						$(g_{1},g_{1}) = (g_{1},g_{2}) = (g_{1},g_{2}$		
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ad is (Check the appropriate dassification)       OII field wastes generated from oil and ges apploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications or month only)         Image: Check EXEMPT:       OII field wastes generated from oil and ges apploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications or month only)         Image: Check EXEMPT:       OII field wastes generated from oil and ges apploration terms as provided)         Image: Check EXEMPT:       OII field waste starabous waste as defined by 40 CR, part 251, subport D, as amended. The following documentation demonstrating the waste as bacardous to statched. (Check the appropriate items as provided)         Image: Check The Approval. Dbt ain ed         Image: Statched. (Check the appropriate items as provided)         Imag	UANTITY		B - BARRE	LS	L-LIQUID	12 y-ya	RD\$	E - EACH
ereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.          7-9-2013       0010000000000000000000000000000000000	<u>Carrie Her</u> i (PRIMT) AUTHORIZED AC ansporter's me <u>SB</u> dress <u>51</u>	MSDS Informat Prior Emergency nor determination nandez ENTS SIGNATURE rothers Was 2 W. Texas	ion X RCRA Haz Approval Obta: -hazradous, non-oilfeild waste and a desclption of the waste m ste Services, In Ave.	ardous Waste Analysis <b>ined</b> that has been ordered by rust accompany this form	n) DATE Driver's Name Print Name	f Public Safety (the order,		rmo Z
SHIPMENT DATE       DRIVER'S SIGNATURE       The second se							facility listed balavy	
TRUCK TIME STAMP       RECEIVING AREA         Name/No.       Name/No.         V:       OUT:       Name/No.         rmit No.       Halfway Facility / NM1-006       Phone No.       575-393-1079         Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       Phone No.       575-393-1079         NORM READINGS TAKEN? (Circle One)       YES       NO       If YES, was reading > 50 micro roentgens? (circle one)       YES       NO         PASS THE PAINT FILTER TEST? (Circle One)       YES       NO       BS&W/BBLS Received       BS&W (%)         Feet       Inches       BS&W/BBLS Received       BS&W (%)       Mathematical Received       BS&W (%)	ereby certify that the abov	e named material(s) w		ator's site listed above a			gaspier	Do
Halfway Facility / NM1-005     Fible No.     575-393-1079       Idress     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220     50 micro roentgens? (circle one)     YES       NORM READINGS TAKEN? (Circle One)     YES     NO       PASS THE PAINT FILTER TEST? (Circle One)     YES     NO       Feet     Inches     Inches       t Gauge to circle Queet     Free Water     Inches	TRUCI		and the second		DELIVE	R	ECEIVING ARE	
NORM READINGS TAKEN? (Circle One)     YES     NO     If YES, was reading > 50 micro roentgens? (circle one)     YES     NO       PASS THE PAINT FILTER TEST? (Circle One)     YES     NO       Feet     Inches       it Gauge     BS&W/BBLS Received     BS&W (%)       Free Water     Total Received	ermit No. <u>Halfway Fa</u>		shad NM 88320		Phone No.	575-393-1079		
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t Gauge BS&W/BBLS Received BS&W (%) Free Water Ceived Total Received		Feet	Inches					
I hereby dentify that the avere to ad material has been (civel@one): ACCEPTED DENIED If denied, why?	nd Gauge	rest			BS	Free Water	BS&W	(%)
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Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

Company/Generator: NAVAJC Company Man: MIKE H		Well: Rig:	WEST RACK
	OLDER	Rio:	
Trucking CDDAT		~~ <del>0</del> .	
Trucking: S BROT	HERS	PO:	
Date: 7/9/2013		Driver:	GREG
3rd Party Ticket: 105513		Vehicle:	3

Type CAMUI or DELLAR AND	的原因合於各部的			
Product	<u>Quantity</u>	<u>Area</u>	<b>Description</b>	
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51		

#### Demand Conditionation Statement of Master Status where 20 and a first state of the state of the

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

____MSDS Information ____RCRA Hazardous Waste Analysis ____Process Knowledge ____Other (Provide description above)

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Received		Total Received		

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Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

TICKET: 515722				
Bill To:	NAVAJO	namen o samene o a samene namen in anna 18 Ab canana a sameni Abhillia Abhillia a samana Abhillia	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO		Well:	WEST RACK
Company Man:	MIKE HOLDER		Rig:	
Trucking:	S BROTHERS		PO:	
Date:	7/9/2013		Driver:	GREG
3rd Party Ticket:	105514		Vehicle:	3
•				
Comments -			的建筑是中国经济	
	NAME AND ADDRESS OF ADD			
Type of Materials				
Product		<u>Quantity</u>	Area Descrip	<u>dion</u>
Contaminated Soil (RC	CRA Exempt)	12.00 yards	50/51	
Generator Certificati				$\mathbf{T}_{\mathbf{r}}$ is a second sec
I hereby certify that acco	ording to the Resource	Conservation and Rec	covery Act (RCRA) a	and the US Environmental Protection Agency's July

1988 regulatory determination, the above described waste is: _____ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt

waste.
 X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):
 MSDS Information _____ RCRA Hazardous Waste Analysis ______ Process Knowledge ______ Other (Provide description above)

Driver/Agent (signature)

Tank Bottoma

	Feet	Inches		
1st Guage			BS &W/BBLS Received	BS & W
2nd Guage			Free Water	
Received			Total Received	

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erator No. N/A		an a	Location of Origin	NO. <u>1</u>	05514	
rators Name <u>Navajo Refinir</u>	ng Co. LLC		Lease/Well Name & No.		-	
ress PO Box 159			County	N/A		
State, Zip Artesia, NM 882	11-0159	• •	API No. Rig Name & No. ,			·····
^{ne No.} <u>575-748-3311</u>			AFE/PO No.			
Based Muds			2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000			
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ter Based Cuttings duced Formation Solids	Produced Water (Non-Injectable Gathering Line Water/Waste (N			Produced Water (Injectable) Gathering Line Water/Waste	(Injectable)	
k Bottoms Contaminated Soil	Truck Washout (exempt waste)					
Plant Waste STE GENERATION PROCESS:	DRILLING		N 🗌	PRODUCTION	GATHERING	i LINES
		al the state of the				
-Exempt Other Soil Con	taining - Fucl	0:1	*please select fr	om Non-Exempt Waste List of	back Unity	-lait
WTITY	8 - BARRELS	-	L - LIQUID	12 Y-YARDS		E - EACH
eby certify that according to the Resource Conse	rvation and Recovery Act (RCRA) a	ind the US Environm	nental Protection Ag	gency's July 1988 regulatory de	termination, the abov	e described waste
is (Check the appropriate classification) Oil field wastes g	enerated from oil and gas explora	tion and production	n operations and are	e not mixed with non-exempt w	aste (R360 Accepts o	ertifications on a n
RCRA EXEMPT:						
. month only}			·			
RCRA NON-EXEMPT; Oil field waste w	hich is non-hazardous that does no				ics established in RCF	A regulations, 40 (
RCRA NON-EXEMPT: Oil field waste wi 261.21-261.24, o	r listed hazardous waste as define	d by 40 CFR, part 20			ics established in RCF	A regulations, 40
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# TRANSPORTER COPY

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Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

#### PERMIAN BASIN REGION

TICKET: 515841		NAME OF A DESCRIPTION OF A	
Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/10/2013	Driver:	GREG
3rd Party Ticket:	105515	Vehicle:	3
Comments			
Type of Materials		Content and the second of the second of the second of the second s	
Product	Quantity	<u>Area</u> <u>Descrip</u>	tion

Contaminated Soil (RCRA Exempt)

Generator Certification Statement of Waste Status
I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July

50/51

1988 regulatory determination, the above described waste is: _____ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

12.00 yards

<u>X</u> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

Driver/Agent (signature)

ank Bottoms

	Feet	Inches		
1st Guage			BS & W/BBLS Received	BS & W
2nd Guage	[·		Free Water	
Received			Total Received	

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RCRA EXEMPT:	Oil field wastes month only]	generated from oil and ga	as exploration and product	tion operations and are	e not mixed with non-exempt w	vaste (R360 Accepts	certifications on a p
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TRANSPORTER COPY

Version 1

C-138



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

#### PERMIAN BASIN REGION

TICKET STICKET					
Bill To:	NAVAJO	Lease:	ARTESIA YARD		
Company/Generator:	NAVAJO	Well:	WEST RACK		
Company Man:	MIKE HOLDER	Rig:			
Trucking:	S BROTHERS	PO:			
Date:	7/12/2013	Driver:	JOSH		
3rd Party Ticket:	105517	Vehicle:	1		
Comments Contraction	felievent altre some all statistical parts in a series of the series of the	構成でも見			

Type of Materials				į
Product	<u>Quantity</u>	<u>Area</u>	Description	
Contaminated Soil (RCRA Exempt)	12.00 yards	50/51		

# Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): ______ MSDS Information ______ RCRA Hazardous Waste Analysis ______ Process Knowledge ______ Other (Provide description above)

# Driver/Agent (signature)

/	N
$\bigcirc$	V.

Tank Bottoms

	Feet	Inches		
1st Guage			BS &W/BBLS Received	BS & W
2nd Guage			Free Water	
Received			Total Received	

Sperior No.       N/A       No.105517         Sperior No.       Navajo Refining Co. LLC       Location of Origin Location of Origin Location of Origin Location of Provide the Start Multiple Start Start Start Multiple Start Start Start Multiple Start Star	Informatio
perstant No.       N/A       isocoton of Origin       LOCOTI1         perstant No.       Narve jo Refining Co. LLC       Harve & No.       No.         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Art Esila, NM 86211-0159       AH No.       N/A         nv, Stata, Zip       Completion Flidt/Plow back (Non-hjectable)       Quality Vale (Injectable)       Advect Vale (Injectable)         viate Based Mads       Completion Flidt/Plow back (Non-hjectable)       Completion Mode (Injectable)       Completion Flidt/Plow back (Injectable)         Secontransact Solid       Contract (Non-hjectable)       Completion Mode (Injectable)       Completion Flidt/Plow back (Injectable)         Ast Estimation Solid       Contract (Non-hjectable)       Completion Flidt/Plow back (Injectable)       Completion Flidt/Plow back (Injectable)         Ast Estimation Solid       Contract (Injectable)       Completion Flidt/Plow back (Injectable)       Completion Flidt/Plow back (Injectable)	وي بين المحدث المراقع
period Rame       Navajo Refitting Co. LLC       Lose (RVM)       Lose (RVM)         period Rame       PO Box 159       County       N/A         stress       PO Box 159       County       N/A         ws. Stars, 20       Art Essia. NM 88211-0159       Rig Mane & No.         stress (MM)       575-748-3311       After Stars, 20         Wate Databas       Mathematic Antices       Mathematic Antices         Wate Databas       Constrained State       Mathematic Antices         Based Cultures       Constrained State       Gathematic Antices         Based Cultures       Databas       Constrained State       Gathematic Antices         Based Cultures       Constrained State       Gathematic Antices       Gathematic Antices         Based Cultures       Constrained State       Gathematic Antices       Gathematic Antices         Based Cultures       Constrained State       Gathematic	
Advess       PO       Box       159       County       N/A         vy, Stan, 2p       Art Esis, NN 88211-0159       N/A       N/A         ill save Audit       Stan, 2p       N/A       N/A         ill save Cuttings       Wadnot Water (Mon-Injectable)       Completion Fully/Row back (Injectable)       Completion Fully/Row back (Injectable)         State Save Cuttings       Wadnot Water (Mon-Injectable)       Completion Fully/Row back (Injectable)       State Save Cuttings         State Save Cuttings       Wathout Water (Mon-Injectable)       Completion Fully/Row back (Injectable)       State Save Cutting         State Save Cuttings       Completion Fully/Row back (Injectable)       State Save Cutting       State Save Cutting         ontext Water Water View Cutting Cuttings       Descendent Cutting       Proceedent Cutting       State Save Cutting         ontext Water Water View Cutting Cutting Cutting Save Cutting       Back Save Cutting       State Save Cutting       State Save Cutting         ontext Water Cutting Cutting Save Cutting Cutting Save Cutting Cutting Save Cutting Cutting Save Cutt	
Art Eds 1a , NM 88211-0159       N/A         Ny, Sara, 2p       Art Eds 1a , NM 88211-0159       N/A         Ny, Sara, 2p       Art Eds 1a , NM 88211-0159       N/A         None Nu       -575-749-3311       Aff/O Nu.         Based Mode       Sara (2p)       N/A         Based Mode       Complexity       Complexity         Art Eds 1a , NM 88211-0159       N/A         Art Eds 1a , NM 88211-0159       N/A         Based Mode       Sara (2p)         Based Mode       N/A         Based Mode       Produced Wider (Non-Injectable)         Art Eds 2000       Complexity (Non-Injectable)         Contaminated Solid       Truck Watch (Mon-Injectable)         Based Mode       PRODUCTION         Based Mode       Solid Contalining - Luc         Art Eds 1a (Non-Injectable)       Injectable)         Sara (2p)       Produced Wider (Non-Injectable)         Sara (2p)       Produced Wider (Sara (2p)         Sara (2p)       Produced Wider (Non-Injectable)         Sara (2p)       Produced Wider (Non-Injectable)	
ATE ESSE, NM 88211-0159       Rig Name & No.         ATE ESSE, NM 88211-0159       Rig Name & No.         Asset Mudd:       Several Mudd:         Based Outlings       Completion Fluid/Plow back (Non-injectable)         Completion Fluid/Plow back (Non-injectable)       Completion Fluid/Plow back (Non-injectable)         Produced Water (Injectable)       Produced Water (Injectable)         Reset Outlings       Completion Fluid/Plow back (Non-injectable)         Produced Water (Injectable)       Produced Water (Injectable)         Reset Mudd:       Completion Water (Water (Non-injectable)         Reset Mudd:       Completion Water (Water (Non-injectable)         Severalimized Soil       Truck Washout (exempt wate)       1         Severalimized Soil       Truck Washout (exempt wate)       1         Severalimized Soil       DRILING       COMPLETION       PRODUCTION         Severalimized Soil       Severalimized Soil       1       1         Check Marth       Soil Containing - Fuc       01       1       1         Severalimized Soil       Containing - Fuc       1       1       1       1       1         Severalimized Soil       Containing - Fuc       01       1       1       1       1       1       1       1       1       <	
Based Mudd:       Based Cutting:       Washous Water (Non-Injectable)       Gomdetion Flid(Plow back (Non-Injectable)       Gomdetion Flid(Plow back (Non-Injectable)         File Based Cutting:       Gomdetion Flid(Plow back (Non-Injectable)       Gomdetion Flid(Plow back (Non-Injectable)       Gomdetion Flid(Plow back (Non-Injectable)         File Based Cutting:       Gastering Line Water (Non-Injectable)       Gastering Line Water (Non-Injectable)       Gastering Line Water (Non-Injectable)         Start General Solid       Truck Washour (see mpr washe)       I       Gastering Line Water (Non-Injectable)         Start General Solid       DRILLING       COMPLETION       PRODUCTION       GASTHERNING LINES         ASTE General Times       Solid Containing - Luc       Oil       Processcient from Non-Exempt Waste List on book Unit function         ASTE General Times       Solid Containing - Luc       Oil       IZ       y- vactos       E         ummtry       B- SARELS       L-UDUD       IZ       y- vactos       E       E         are containing to the Resource Conservation and Record and and gas exploration and production operations and are not minerum standous by characteristic established in RCA regula       Gomdetion (SGA regula       E         BCRA REMPT       Oil field waster generated from oil and gas exploration and production operations and are not minerum standous by charactous by charactous the stare of the stare of the stare of the stare of the	
It Base Cuttings       Washout Water (Non-Injectable)       Washout Water (Non-Injectable)         Valuer Based Musics       Completion Full/Non-back (Non-Injectable)       Completion Full/Non-back (Non-Injectable)         Valuer Based Musics       Completion Full/Non-back (Non-Injectable)       Completion Full/Non-back (Non-Injectable)         Order Formition Solds       Contaminated Sold       Tuck Washout (Non-Injectable)       Completion Full/Non-back (Non-Injectable)         Safe Generalization Solds       Tuck Washout (Non-Injectable)       Produced Water (Non-Injectable)       Completion Full/Non-back (Non-Injectable)         Safe Generalization Solds       Tuck Washout (Non-Injectable)       Produced Water (Non-Injectable)       Completion Full/Non-back (Non-Injectable)         Safe Generalization Solds       DellLING       COMPLETION       PRODUCTION       GATHERING LINES         On Exempt Other       Soill Containing = Luc       Oil       Plant Mater       Injectable)         Out Free Solid Containing = Luc       Oil       Safe Generalization       Injectable)       Environmental Protection Agency's July 1988 regulatory determination, the above determination of the object wells on other object wells on ot	<u> </u>
If Based Cuttings       Washout Water (floor-injectable)       Washout Water (floor-injectable)         Valuer Based Nuts       Completion Fild/Work back (Non-injectable)       Completion Fild/Work back (Non-injectable)         Valuer Based Nuts       Completion Fild/Work (Non-injectable)       Completion Fild/Work back (Non-injectable)         Valuer Based Cuttings       Completion Fild/Work (Non-injectable)       Completion Fild/Work back (Non-injectable)         State Status       Completion Fild/Work (Non-injectable)       Completion Fild/Work (Non-injectable)         State Status       Completion (Non-injectable)       Completion (Non-injectable)         State Status       Dell'LING       COMPLETION       PRODUCTION         State Status       Dell'LING       COMPLETION       PRODUCTION       GATHERING LINES         on Exempt Other       Soil Containing - Luc       Oil       12       Y. vARDS       E - Ingress         UANTITY       S - BARRELS       L. URUD       12       Y. vARDS       E - Ingress         Wash ta coording to the Resource Constrantion and Recovery Act (RCAA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above determination of monh only       E - Ingress         If field waste which is on-hazardous that does not exceed the minimum standark for waste hazardous by characteristics established in RCAA Reput       E - Rearce File - Repress	
Visite face d cutings       Produced Water (Non-Injectable)       Indextor (Injectable)         and Bottoms       Gathering Line Water (Non-Injectable)       Indextor (Injectable)         and Bottoms       Gathering Line Water (Name Table)       Gathering Line Water (Injectable)         and Bottoms       Gathering Line Water (Name Table)       Injectable)         and Bottoms       Gathering Line Water (Name Table)       Injectable)         as Paint Water       DRILLING       COMPLETION       PRODUCTION         on Exampt Other       Soil Containing - Luc       Oil       Produced Water (Injectable)         on Exampt Other       Soil Containing - Luc       Oil       12       y-vADOs       Exampt Other         UANTITY       9- BARRILS       L-UQUID       12       y-vADOs       Exampt Other Other       Injectable         UANTITY       9- BARRILS       L-UQUID       12       y-vADOs       Exampt Other Other Other Other Other       Injectable       Injectable       Injectable <td></td>	
roduced formation Solds       Gathering Line Water/Wate (Non-Linetable)       Gathering Line Water/Wate (Injectable)         ask Bottoms       File Water/Wate (Non-Linetable)       Gathering Line Water/Wate (Injectable)         SP Containinated Sold       Truck Washout (exempt waste)       Gathering Line Water/Wate (Injectable)         ASTE GENERATION PROCESS:       DRILLING       COMPLETION       PRODUCTION       GATHERING LINES         On-Exempt Other       Soil Containing - Loc       Oil       *please select from Non-Exempt Waste Line water/Wate Line water/Water (Injectable)         on-Exempt Other       Soil Containing - Loc       Oil       *please select from Non-Exempt Waste Line water/Waste (Injectable)         on-Exempt Other       Soil Containing - Loc       Oil       12       y-yacos       E - Instruction         AMITTY       B-BARRUS       L-UIUID       12       y-yacos       E - Instruction         Market Control on the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1989 regulatory deterministion, the above description and production operations and are not mixed with non-exempt water (Injectable)       Market (Injectable)         RCRA ROM-EXEMPT:       Oil field waste which is non-hazardous wate s defined by 40 CR, par 261, subpart D, as amended. The following documentation demonstrating the water material water and a description of the water must accompare to the water must accompare to the water water must accompare to the water must accompar	
B& Containing and Soll       Truck Wishout (exempt waste)         SP Term Waste       Inclusion (exempt waste)         APE GENERATION PROCESS:       DRILLING       COMPLETION       PRODUCTION       GATHERING LINES         APE GENERATION PROCESS:       DRILLING       COMPLETION       PRODUCTION       GATHERING LINES         On Exempt Other       Soil Containing - Luc       01       12       y-yacos       Exempt Other         WANTTY       3-SARRELS       L-UQUID       12       y-yacos       Exempt Other         Instruction of the Waste generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (NS60 Accepts cartification)       Instruction only       Samedad. The following documentation demonstrating the waste hazardous waste addens not exceed the minimum standards for waste hazardous by characteristics established mRCRA regula 25:12 EX1.47 in the hazardous waste addens of the CRE part 261, subpart D, as amended. The following documentation demonstrating the waste hazardous waste addens of the CRE part 261, subpart D, as amended. The following documentation demonstrating the waster waster form oil and gas explorate hazardous waste analysis       Other (Provide Description Below)         Prior Approval Obtained       MS60 Accept Larined       Other (Provide Description Below)       Second Larined         Matcheristics       SIL V. Texas Ave.       Prior Approval Obtained       Other form Accept Larined       Second Larined       Second Larined       Se	المعورية القرارية
AVESTE GENERATION PROCESS:       DRILLING       COMPLETION       PRODUCTION       GATHERING LINES         On-Exempt Other       Soil Containing - Luc       01       release-select from .Non-Exempt Waste List on back Unit Lines         On-Exempt Other       Soil Containing - Luc       01       12       y-vARDS       E -         UNANTIV       B - BARRELS       L - UQUID       12       y-vARDS       E -         Interdep conting to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's Mky 1988 regulatory determination, the above description and production operations and are not mixed with non-exempt waste (R360 Accepts certification of theid wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certification month only)         Image RCRA EXEMPT:       OIl field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certification areadous is statched. (Check the appropriate lass of ether by 40 CR, part 261, subpart D, as amended. The following documentation demonstrating the waste marked with non-exempt waste (R360 Accepts certification and a description Relow)       Prior Approval Obtained         Image Mass Information       Image RCRA Hazardous Waste Analysis       Other (Provide Description Below)         Prior Approval Obtained       Driver's Name       Solentiate         Image SB Tothers Waste Services, Inc.       Driver's Name       Totk Name       Solentiate	in Egel and
On-Exempt Other       Soil Containing - (u) (i)       *piease select from , Non-Exempt Waste List on back Unit (u)	
UNNTITY       B - BARRELS       L - LIQUD       12       Y - YARDS       E - Instruction         Instruction       Instruction       B - BARRELS       L - LIQUD       12       Y - YARDS       E - Instruction         Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       I	
UNNTITY       B - BARRELS       L - LIQUD       12       Y - YARDS       E - Instruction         Instruction       Instruction       B - BARRELS       L - LIQUD       12       Y - YARDS       E - Instruction         Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       Instruction       I	
	ACK
and is (Check the appropriate classification)  RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts cartificati month only)  RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regula 261.21-261.24, or listed hazardous waste as defined by 40 CR, part 261, subpart D, as amended. The following documentation demonstrating the was hazardous is attached. (Check the appropriate items as provided)  MID Information KI RCRA HAzardous Waste Analysis Other (Provide Description Below) Prior Approval Obtained  EMERGENCY NON-OILFELD: Emergency non-hazardous, non-olifelid waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous ansporter's SBrothers Waste Services, Inc. Artesia, NM 88210 ST5-748-1213 Truck No. FRUCK TIME STAMP N: OUT: Delivery somarule Delivery somarule Delivery ont RECEIVING AREA Name/No. Haffway Fadility / NM1-006 MIE Marker 66 Hwy 62/180 Cartisbad, NM 88220	ACH
RCRA EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certification only)         X       RCRA NON-EXEMPT:       Oil field wastes which is non-hazardous waste as defined by 40 CR, part 261, subpart D, as amended. The following documentation demonstrating the washazardous is attached. (Check the appropriate items as provided)         MSDS information       X       RCRA Hazardous Waste as defined by 40 CR, part 261, subpart D, as amended. The following documentation demonstrating the washazardous is attached. (Check the appropriate items as provided)         MSDS information       X       RCRA Hazardous Waste Analysis       Other (Provide Description Below)         Prior Approval Obtained       Prior Approval Obtained       Other (Provide Description Below)         Prior Approval Obtained       Driver's Name       Carrie         Benergency non-hazardous, non-oiffeld waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous determination and a desciption of the waste must accompany this form)       Carrie         Carrie       Benergency non-hazardous, non-oiffeld waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous determination and a desciption of the waste must accompany this form)       Carrie         Carrie       Benergency non-hazardous, non-oiffeld waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous determination and a desciption of the waste must accompany this form) <t< td=""><td>oed waste</td></t<>	oed waste
IPRINT) AUTHORIZED AGENTS SIGNATURE     DATE     SIGNATURE       ansporter's     ame     SBrothers Waste Services, Inc.     Driver's Name       anne     512 W. Texas Ave.     Print Name     Toshuc Gees I.n       Artesia, NM 88210     Phone No.     Truck No.     Image: SignAture       hone No.     575-748-1213     Truck No.     Image: SignAture       stafPMENT DATE     DRIVER'S SIGNATURE     DELVERY DATE     DeLVERY DATE       TRUCK TIME STAMP     DRIVER'S SIGNATURE     DELVERY DATE     DELVERY DATE       N:     OUT:     DRIVER'S SIGNATURE     Phone No.       TRUCK TIME STAMP     Name/No.     StafPMENT DATE     DELVERY DATE       N:     OUT:     DRIVER'S SIGNATURE     Phone No.       Mame/No.     StafPMENT DATE     DRIVER'S SIGNATURE       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220     Phone No.     575-393-1079	waste
SBrothers Waste Services, Inc.     Drivers Name       ddress     512 W. Texas Ave.     Print Name       Artegia, NM 88210     Phone No.       hone No.     575-748-1213       hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-12-2013     John Content of the disposal facility listed below.       TRUCK TIME STAMP     DRIVER'S SIGNATURE       N:     OUT:       N:     OUT:       Halfway Facility / NM1-006     Phone No.       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
SBrothers Waste Services, Inc.     Drivers Name       ddress     512 W. Texas Ave.     Print Name       Artegia, NM 88210     Phone No.       hone No.     575-748-1213       hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-12-2013     John Content of the disposal facility listed below.       TRUCK TIME STAMP     DRIVER'S SIGNATURE       N:     OUT:       N:     OUT:       Halfway Facility / NM1-006     Phone No.       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
Artesia, NM 88210       Phone No.         575-748-1213       Truck No.         hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       7-12-2013         SHIPMENT DATE       DRIVER'S SIGNATURE         TRUCK TIME STAMP       RECEIVING AREA         N:       OUT:         Net No.       Phone No.         Halfway Facility / NM1-006       Phone No.         Mile Marker 66 Hwy 62/180 Carlisbad, NM 88220	<u> </u>
Index No.     575-748-1213       hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.       Image: State Press Signature       TRUCK TIME STAMP       N:     OUT:       OUT:       Ite Name/       ermit No.       Halfway Facility / NM1-006       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	<u>==</u>
tereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.          T-12-2013       John John Steresting         DELIVERY DATE       DRIVER'S SIGNATURE         TRUCK TIME STAMP       RECEIVING AREA         N:       OUT:         te Name/       Halfway Facility / NM1-006         Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
SHEPMENT DATE     DRIVER'S SIGNATURE       TRUCK TIME STAMP     DRIVER'S SIGNATURE       N:     OUT:       te Name/ ermit No.     Halfway Facility / NM1-006       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
SHIPMENT DATE     DRIVER'S SIGNATURE       TRUCK TIME STAMP     RECEIVING AREA       N:     OUT:       te Name/       ermit No.     Halfway Facility / NM1-006       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	2
N:         OUT:         Name/No.           te Name/ ermit No.         Halfway Facility / NM1-006         Phone No.         575-393-1079           ddress         Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220         Phone No.         575-393-1079	
ermit No. Halfway Facility / NM1-006 575-393-1079 ddress Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
ddress Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220	
NOUSS VENDERAL CITICE ONE) (ED NO 7 IN 1991 MAR 1993 MAR	
PASS THE PAINT FILTER TEST? (Circle One) YES NO	NO
	NO
Feet Inches BS&W/BBLS Received BS&W (%)	NO
Free Water	NO
teceived	NO
I hereby certify that the andve load material has been (circle one): CCEPTED DENIED If denied, why? Ausse (primit) DENIE DENIED DENIED If denied, why? Ausse (primit) SIGNATURE	NO
-138	NO

- - --



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

Fiburosentativa (algnaturo) 🖓

#### PERMIAN BASIN REGION

Bill To: NAVAJO Lease: ARTESIA YARD				
Company/Generator: NAVAJO Well: WEST RANCH				
Company Man: MIKE HOLDER Rig:				
Trucking: S BROTHERS PO:				
Date: 7/15/2013 Driver: JOSH				
3rd Party Ticket: 105518 Vehicle: 1				

Type of Materials				
Product	<u>Quantity</u>	<u>Area</u>	Description	
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51		

Generator Control Control Control of Waste Status I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

_____ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):
_______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

## Driver/Agont (signature)

Tank Bottoms					
Feet	Inches				
1st Guage	BS &W/BBLS Received	∎S & W			
2nd Guage	Free Water	V			
Received	Total Received				

ANTITY B - BARRELS L - LIQUID ANTITY L - LIQUID	STE MANIFEST Company Man Contact Informat Name
Protors Name Navajo Refining Co. LLC PO Box 159 PO Box 159 Counter PO Box 159 Ref Addata PO Box 159 Re	Phone No.
Protors Name Navajo Refining Co. LLC PO Box 159 PO Box 159 Counter PO Box 159 Ref Addata PO Box 159 Re	NO.105518
Protection Name Narvajo Refiniting Co.LLC Name & No. PO Box 159 County APRo. Artesia, NM 88211-0159 APRo. Ng Hame & N Artesia, NM 88211-0159 Rg Hame & N AFRON Ng Hame & N Ng Hame	rigin
API No. R Stata, Zip Artesia, NM 88211-0159 R Artesia, NM 88210 R Artesia, MM 88220 R Artesia, MM 88210 R Artesia, MM 88210 R Artesia, MM 882	· · · · · · · · · · · · · · · · · · ·
Artesia, Jp       Artesia, NM 88211-0159       Age Name & N         575-748-3311       AFE/PO No.         Based Cuttings       Completion Fluid/How back (Non-Injectable)         Garded Kutings       Completion Fluid/How back (Non-Injectable)         Artessal Muds       Completion Fluid/How back (Non-Injectable)         Artessal Cuttings       Completion Fluid/How back (Non-Injectable)         Artessal Solid       Gattering Line Water (Non-Injectable)         Artessal Cuttings       Completion Fluid/How back (Non-Injectable)         Artessal Solid       Gattering Line Water (Non-Injectable)         Artessal Solid       Flattwaster Water (Non-Injectable)         Artessal Solid       Gattering Line Water (Non-Injectable)         Artessal Solid       Flattwaster Water (Non-Injectable)         Streampt Other       Sol1 Contraining - PUt(1/011       *please sole         NTTY       B - BARRELS       L-UQUD         Artessal Solid Line Materia Work in Son-Hazardous that does not exceed the minimum standards for the appropriate classification)       Oli field waste which is non-Hazardous that does not exceed the minimum standards for the bazardous is datached. (Check the appropriate litems as provided)       Material Postecking Solid Contraining - 26121-26124, or litele hazardous waste solahneed by 40 CFR, name the bazardous Solid Flore Material Postecking Solid Contraining - 26121-26124, or litele hazardous waste solahneed by 40 CFR, name the hazardous is datached	
AFE/PO No.         Saded Muds         Based Cuttings         There Raved Cuttings         Completion Fluid/Flow back (Non-Injectable)         Gathering Line Water (Non-Injectable)         State Mads         Based Cuttings         Pottaminated Soll         Path Wats         State Gathering Line Water (Non-Injectable)         Figure Value         Pottaminated Soll         Path Wats         State Cathering Line Water (Non-Injectable)         Figure Value         Path Water         State Cathering Line Water (Non-Injectable)         Truck Water (Non-Injectable)         Truck Water (Non-Injectable)         Present Other         Soll Containing - PUCI// Cill         * please sole         ANTTY         Best Cathering Line Water (Non-Injectable)         State Cathering Line Water (Non-Injectable)         Protectable         Gathering Line Water (Non-Injectable)         Best Cathere water water (Injectable)	N/A
Based Nudos         Based Cuttings         Washout Watter (Non-Injectable)         Completion Full/Flow back (Non-Injectable)         Subset Research Understand States         P Containinated Soll         Truck Washout (exempt waste)         State Attrings         P Containinated Soll         Truck Washout (exempt waste)         State Cetters Line	No
Based Cuttings       Washout Water (Non-Injectable)         Har Based Muds       Completion Fluid/New back (Non-Injectable)         Added Formation Solids       Gathering Line Water/Waste (Non-Injectable)         Mode Formation Solids       Gathering Line Water/Waste (Non-Injectable)         P Contaminated Solid       Truck Washout (exempt waste)         STE GENERATION PROCESS:       DRILLING       COMPLETION         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)         Steempt Other       Solid       DRILLING       COMPLETION         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)       Please selection         ANTTY       B - BARRELS       L - LIQUID         Index selection       DRI Hell Wastes generated from oil and gas exploration and production operations and moducition operations and module (Science)       Science)         RCRA NON-EXEMPT:       Oil field waste which is non-flazardous waste as defined by 40 CFR, part 261, subpart 0, as harardous is atdaced. (Check the appropriate classification)       Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Scien	
Based Cuttings       Washout Water (Non-Injectable)         Har Based Muds       Completion Fluid/New back (Non-Injectable)         Added Formation Solids       Gathering Line Water/Waste (Non-Injectable)         Mode Formation Solids       Gathering Line Water/Waste (Non-Injectable)         P Contaminated Solid       Truck Washout (exempt waste)         STE GENERATION PROCESS:       DRILLING       COMPLETION         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)         Steempt Other       Solid       DRILLING       COMPLETION         Steempt Other       Solid       Completion Fluid/New back (Non-Injectable)       Please selection         ANTTY       B - BARRELS       L - LIQUID         Index selection       DRI Hell Wastes generated from oil and gas exploration and production operations and moducition operations and module (Science)       Science)         RCRA NON-EXEMPT:       Oil field waste which is non-flazardous waste as defined by 40 CFR, part 261, subpart 0, as harardous is atdaced. (Check the appropriate classification)       Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Science/Scien	
Inter Based Muds       Completion Fluid/How back (Mon-Injectable)         Soluce Formation Solids       Produced Warts (Mon-Injectable)         Soluce Formation Solids       Produced Warts (Mon-Injectable)         Soluce Formation Solids       Inter Based Cuttings         Values Formation Solids       Inter Based Cuttings         State of Formation Solids       Inter Based Cuttings         Sectors       DRILLING       COMPLETION         Sectors       Solid Contraining - Fuel/Dil       *please selectors         Sectors       DRILLING       COMPLETION         Sectors       DRILLING       COMPLETION         Sectors       DRILLING       Completion State         Sectors       DRILLING       Completion State         Sectors       DRILLING       Completion State         Sectors       DRILLING       Completion State         ANTTY       B - BARRELS       L- LIQUID         Preventify that according to the Resource Conservation and Recovery Act (BCRA) and the US Environmental Protection       did (Check the appropriate classification)         Cliffield waste which is non-fazardous waste as defined by 40 CFR, part 261, subpart D, as heardous waste analysis       Prior Approval Obtained         Prior Approval Obtained       Check the appropriate classification and edeciption of the waste must accompany this form)	Washout Water (Injectable)
Settering Line Water/Waste (Non-Prijectable)         Picontaminated Soll         P Contaminated Soll         Description         Settering Line Water/Waste (Non-Prijectable)         P Contaminated Soll         Description	Completion Fluid/Flow back (Injectable)
A BOTOMS       Truck Washout (exempt waste)         SPEAR Waste       Truck Washout (exempt waste)         SPEAR Waste       DRILLING       COMPLETION         S-Exempt Other       Soill Containing - Fucil 0:1       rplease selection         ANTTY       B - BARRELS       L-LIQUD         rebusterify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection       dis (check the appropriate classification)         Clined KEXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and motion hyle         R CRA NON-EXEMPT:       Oil field waste which is non-hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous is tadacid. (Check the appropriate classification)         MSDS information       K BCRA Hazardous Waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous waste as a Subpart	Produced Water (Injectable) Gathering Line Water/Waste (Injectable)
SPLIAIT Waste         STE GENERATION PROCESS:         DRILLING         OCMPLETION         Second Data	
SSTE GENERATION PROCESS:       DRILLING       COMPLETION         Determine Other       Soill Containing - Fuel/Oil // Please selection and production operations and mecovery Act (RCRA) and the US Environmental Protection dis (Check the appropriate classification)       It field wastes generated from oil and gas exploration and production operations and month only)         RCRA EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and month only)         RCRA NON-EXEMPT:       Oil field waste which is non-hazardous waste as defined by 40 CFR, and 261, subpart D, as hazardous is attached. (Check the appropriate items as provided)         MSDS information       Entremoty on hazardous, non-oilfeild waste that has been ordered by the Departme determination and a description of the waste must accompany this form)         Carrie Hermandez       Driver's Name         mem       SBrothers Waste Services, Inc.       Driver's Name         Artesia, NM 88210       Print Name         previous crifty that the above named material(s) was/were picked up at the Generator's site listed above and delevered w       Z-/C         seewers DAT       OUT:       Canters 1000         seewers DAT       NOR READINGS TAKEN? (Circle One)       YES         NORM READINGS TAKEN? (Circle One)       YES       NO         Segure       Feet       Inches         Gauge       Feet       Inches	-
ANTITY B - BARRELS L - LIQUID Arrows and the use of the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection d is (Check the appropriate classification) RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and month only) RCRA NON-EXEMPT: Oil field wastes which is non-hazardous waste as defined by 40 CFR, part 261, subpart 0, as hazardous is attached. (Check the appropriate items as provided) MSDS information Prior Approval Obtained EMERGENCY NON-OILFEID: EMERGENCY NON-OILFEID: Control of the waste must accompany this form) Carrie Hernandez PRINT Authonaza Actust SideAnue Artesia. NM 88210 Driver's Name SBrothers Waste Services, Inc. Fint Name Prior Approval Control of the Waste listed above and delivered w Truck No. S75-748-1213 Truck No. Mile Marker 66 Hwy 62/180 Carisbad, NM 88220 NORM READINGS TAKEN? (Crick One) Feet Inches Gauge Gauge Gauge Gauge Feet Inches	PRODUCTION GATHERING LINES
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reby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection of (RCRA EXEMPT)       Oil field wastes generated from oil and gas exploration and production operations and month only)         Image: RCRA NON-EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and month only)         Image: RCRA NON-EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and month only)         Image: RCRA NON-EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and month only)         Image: RCRA NON-EXEMPT:       Oil field waste which is non-hazardous waste as defined by 40 CFR, part 261, subpart 0, as hazardous is attached. (Check the appropriate items as provided)         Image: RCRA NON-OILFEILD:       Emergency non-hazardous, non-oilfeild waste that has been ordered by the Department determination and a desciption of the waste must accompany this form)         Carrie Hernandez       Driver's Name         Image: Start NM 88210       Phone No.         Start NM 88220       Nover's signAture         NORM READINGS TAKEN? (Circle One)       YES	
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RCRA EXEMPT:       Oil field wastes generated from oil and gas exploration and production operations and month only)         RCRA NON-EXEMPT:       Oil field waste which is non-hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous is attached. (Check the appropriate items as provided)         MSDS information       Image: RCRA Hazardous Waste Analysis         Prior Approval Obtained       Prior Approval Obtained         Carrie Hernandez       Emergency non-haradous, non-oilfeild waste that has been ordered by the Departme determination and a desciption of the waste must accompany this form)         Carrie Hernandez       Driver's Name         nsporter's       Strothers Waste Services, Inc.         Print Name       Phone No.         512 W. Texas Ave.       Print Name         Phone No.       575-748-1213         Truck No.       Truck No.         strekes       OUT:         Shiftmeth daty facility / NM1-005       Phone No.         NORM READINGS TAKEN? (Circle One)       YES         Norm READINGS TAKEN? (Circle One)       YES         Pass THE PAINT FILTER TEST? (Circle One)       YES         Steade       Feet         Inches       Feet	on Agency's July 1988 regulatory determination, the above described waste
RCRA NON-EXEMPT:       month only)         RCRA NON-EXEMPT:       Oli field waste which is non-hazardous that does not exceed the minimum standards f         261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous is attached. (Check the appropriate items as provided)         MSDS information       RCRA Hazardous Waste Analysis         Prior Approval Obtained       Emergency non-hazardous, non-olifeild waste that has been ordered by the Departme determination and a desciption of the waste must accompany this form)         Carrie Hernandez       Date         prentry Auriponezo aceus sideAnuse       Date         assorter's       Date         mage       SBrothers Waste Services, Inc.         Print Name       Phone No.         512 W. Texas Ave.       Print Name         Mress       Site NM 88210         one No.       575-748-1213         steps certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w         SHEMENT DATE       DATE         TRUCK TIME STAMP       Truck No.         it:       OUT:         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES </td <td></td>	
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261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as hazardous is attached. (Check the appropriate items as provided)         MSDS information       RCRA Hazardous Waste Analysis         Prior Approval Obtained       Prior Approval Obtained         EMERGENCY NON-OILFEILD:       Emergency non-hazradous, non-oilfeild waste that has been ordered by the Departme determination and a desciption of the waste must accompany this form)       Carrie Hernandez         Carrie Hernandez       DATE         Insporter's       SBrothers Waste Services, Tnc.         mes       512 W. Texas Ave.         Artesia, NM 88210       Phone No.         575-748-1213       Truck No.         areby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w       Z- / C         skiPKMENT DATE       OUT:       Curver's signAtrue         e Name/       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NQ       Nf Yes, was r         NORM READINGS TAKEN? (Circle One)       YES       NQ       Nf Yes, was r         PASS THE PAINT FILTER TEST? (Circle One)       YES       NQ       Nf Yes, was r         Gauge	for waste hazardous by characteristics established in RCRA regulations, 40 0
MSDS information       Information       Information         Prior Approval Obtained         EMERGENCY NON-OILFEILD:       Emergency non-harradous, non-oilfeild waste that has been ordered by the Departmed determination and a desciption of the waste must accompany this form)         Carrie Hernandez       Date         Image: SBrothers Waste Services, Inc.       Driver's Name         nsporter's       Driver's Name         Meres       Signature         Artesia, NM 88210       Phone No.         Some No.       575-748-1213         Truck No.       Truck No.         ShirMenri Date       Date         ShirMenri Date       Date         OUT:       Date         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES         Feet       Inches         Gauge       Eet         Gauge       Eet	is amended. The following documentation demonstrating the waste as non-
Prior Approval Obtained         EMERGENCY NON-OILFEILD:         Emergency non-hazadous, non-oilfeild waste that has been ordered by the Departme determination and a desciption of the waste must accompany this form)         Carrie Hernandez         Device Present Authomatic Astems signature         Insporter's me         SBrothers Waste Services, Inc.         Print Name         Artesia, NM 88210         Ship Mentron Author State Services, Inc.         Print Name         Artesia, NM 88210         Ship Mentron Date         Carrie Outres State Services, Inc.         Print Name         Phone No.         575-748-1213         Truck No.         Ship Mentron Date         Outre         Ship Mentron Date         Outre         Ship Mentron Date         Outre         Norme Ko.         Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220         Norm READINGS TAKEN? (Circle One)         YES         PASS THE PAINT FiltTER TEST? (Circle One)         YES         Feet         Inches	
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EMERGENCY NON-OILFELD:       determination and a description of the waste must accompany this form)         Carr1e Hernandez	
Carrie Hermandez       DATE         Insporter's me       SBrothers Waste Services, Inc.       Driver's Name         Idress       512 W. Texas Ave.       Print Name         Artesia, NM 88210       Phone No.         one No.       575-748-1213       Truck No.         areby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w       7-14         SHIPMENT DATE       DRIVER'S SIGNATURE       7-14         It       OUT:       OUT:         It Marker 66 Hwy 62/180 Carlsbad, NM 88220       Phone No.       11/145, was r         NORM READINGS TAKEN? (Circle One)       YES       NO       11/145, was r         PASS THE PAINT FILTER TEST? (Circle One)       YES       NO       NO         Feet       Inches       NO       NO       11/145, was r	$\cap$ $\setminus H$ $\cap$
Date     Date       Insporter's me     SBrothers Waste Services, Inc.     Driver's Name       dress     512 W. Texas Ave.     Print Name       Artesia, NM 88210     Phone No.       one No.     575-748-1213     Truck No.       areby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w     7-1       stepsement Date     Datverts signature     7-1       stepsement Date     Datverts signature     7       truck No.     TRUCK TIME STAMP     Truck No.       ti     OUT:     Datverts signature     0       truck No.     Halfway Facility / NM1-005     Phone No.       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220     No     No       NORM READINGS TAKEN? (Circle One)     YES     NO       PASS THE PAINT FILTER TEST? (Circle One)     YES     NO	ance themanoly
Brothers Waste Services, Inc.     Diversity and the services, Inc.       dress     512 W. Texas Ave.     Print Name       Artesia, NM 88210     Phone No.       one No.     575-748-1213     Truck No.       areby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w     7-14       shipment pare     DRIVER'S SIGNATURE     7       shipment pare     DUT:     Phone No.       shipment pare     OUT:     Phone No.       shipment pare     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220     Phone No.       NO     NO     YES     NO       PASS THE PAINT FILTER TEST? (Circle One)     YES     NO       Gauge	SIGNATURE
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Artesia, NM 88210       Phone No.         Artesia, NM 88210       Truck No.         shipmen on No.       575-748-1213       Truck No.         areby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w       7-14         shipmen oare       ORIVER'S SIGNATURE       7-14         shipmen oare       OUT:       Phone No.         a Name/       OUT:       Phone No.         mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       Phone No.         Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NO         NORM READINGS TAKEN? (Circle One)       YES         PASS THE PAINT FILTER TEST? (Circle One)       YES         Feet       Inches         Gauge	Tushua Gersta
Shipmenni Date       DRIVER'S SIGNATURE       Truck No.         Shipmenni Date       DRIVER'S SIGNATURE       7-14         Shipmenni Date       DUT:       7-14         Shipmenni Date       Phone No.       7-14         Shipmenni Date       Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NO       NO         NO       NO       YES       NO       NO       NO         Stippen Stippen Stippen Statistical Statistical Statistical Statistical Statistin Statistin Statistical Statistical Statistical Statist	
ereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered w	
7-14       SHIPMENT DATE       TRUCK TIME STAMP       I:	ulthout incident to the disposal facility listed helow
TRUCK TIME STAMP         OUT:	
I:OUT:Phone No. Trinit NoHałfway Facility / NM1-005 Phone No. dressMile Marker 66 Hwy 62/180 Carlsbad, NM 88220 NORM READINGS TAKEN? (Circle One) YES PASS THE PAINT FILTER TEST? (Circle One) YES NO Feet Inches Gauge Gauge Gauge Gauge	5-2013 postuce
I:OUT:Phone No. Trinit NoHałfway Facility / NM1-005 Phone No. dressMile Marker 66 Hwy 62/180 Carlsbad, NM 88220 NORM READINGS TAKEN? (Circle One) YES PASS THE PAINT FILTER TEST? (Circle One) YES NO Feet Inches Gauge Gauge Gauge Gauge	RECEIVING AREA
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Halfway Facility / NM1-005     Prible No.       dress     Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220       NORM READINGS TAKEN? (Circle One)     YES       PASS THE PAINT FILTER TEST? (Circle One)     YES       Feet     Inches	
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PASS THE PAINT FILTER TEST? (Circle One) YES NO Feet Inches Gauge Gauge Ceived	reading > 50 micro roentgens? (circle one) YES NO
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Gauge d Gauge ceived	3049092607 1
ceived	BS&W/BBLS Received BS&W (%)
	Free Water
I herefoy dentify that the above load material has been circle one: Accorted Dented (If dented,	
	why?/
	TV STAN
	SIGNATURE
138	Versio



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

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## PERMIAN BASIN REGION

的目在市會起放建層	这个学习是是是主义的动 <b>动和</b> 自己们的 <b>不知道</b> 的学校。				
Bill To:	NAVAJO	Lease:	ARTESIA YARD		
Company/Generator:	NAVAJO	Well:	WEST RACK		
Company Man:	MIKE HOLDER	Rig:			
Trucking:	S BROTHERS	PO:			
Date:	7/15/2013	Driver:	JOSH		
3rd Party Ticket:	105519	Vehicle:	1		

Type of Materials				
Product	<b>Quantity</b>	Area	<b>Description</b>	
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51		

# Generator Centreation Statement of Waste Stati/9, and Recovery Act (RCRA) and the US Environmental Protection Agency's July

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

____ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):
_______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

#### Driver/Agenti(signature) as a fillion and the second second second

anik Bottoms

	Feet	inches		
1st Guage			BS &W/BBLS Received	BS & W
2nd Guage			Free Water	
Received			Total Received	

INVESTIGATION CONTRACTOR			(PLEASE PRINT)	Name	
entruses		a second a s	(* 1. 19. standardstandstandstandstandstandstandstandstan	Phone No	
				No.10551	9
perator No.	N/A	<u> </u>	Location of Origin Lease/Well		<u> </u>
perators Name	Navajo Refini	ng Co. LLC	Name & No.		
ddress	PO Box 159	<b>-</b>	County		
		· · · · · · · · · · · · · · · · · · ·	API No.	<u>N/A</u>	
ity, State, Zip	<u>Artesia, NM 88</u>	2110159	Rig Name & No.		
hone No.	575-748-3311	· · · · · · · · · · · · · · · · · · ·	AFE/PO No.	· · · · · · · · · · · · · · · · · · ·	
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Oil Based Muds					1976 - 201
Dil Based Cuttings Nater Based Muds		<ul> <li>Washout Water (Non-Injectable)</li> <li>Completion Fluid/Flow back (Non-In</li> </ul>	lectable)	Washout Water (injectable) Completion Fluid/Flow back (injectable)	
Water Based Cutting	5	Produced Water (Non-Injectable)		Produced Water (injectable)	
Produced Formation Tank Bottoms	Solids	Gathering Line Water/Waste (Non-I	nlectable)	Gathering Line Water/Waste (Injectable)	an and a second
E&P Contaminated S	oil	Truck Washout (exempt waste)			
Sas Plant Waste	· · · · · · · · · · · · · · · · · · ·		· .		
VASTE GENERATI	ON PROCESS:	DRILLING	COMPLETION	PRODUCTION GATH	
Land Same			1		
A. French wirds					
Ion-Exempt Other	Soil Go	ntaining - Fuel Oi	/ *please select fro	om Non-Exempt Waste List on back ${\tt Unl}$	e west Kuik
		B - BARRELS	L - LIQUID	12 Y-YARDS	E - EACH
	An				
	according to the Resource Con propriate classification)	nservation and Recovery Act (RCRA) and I	ine US Environmental Protection Ag	ency's July 1988 regulatory determination, t	ne avove descriped waste
	Oil field waste	s generated from oil and gas exploration	and production operations and are	not mixed with non-exempt waste (R360 Ad	cepts certifications on a p
RCRA EXEMP	T: month only)	2			۰.,
X RCRA NON-EX	KEMPT: Oil field waste	which is non-hazardous that does not e	cceed the minimum standards for w	aste hazardous by characteristics establishe	d in RCRA regulations, 40
	261.21-261.24	4, or listed hazardous waste as defined by	/ 40 CFR, part 261, subpart D, as am	ended. The following documentation demor	strating the waste as non
	hazardous is a	attached. (Check the appropriate items as	s provided)		
	hazardous is a MSDS Informa			Other (Provide Description Below)	
	MSDS Informa	ation RCRA Hazardous		Other (Provide Description Below)	
	MSDS Informa Prior Emergency po	ation X RCRA Hazardous	Waste Analysis	Other (Provide Description Below)	non-hazardous waste
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Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

TICKET: 517425			
Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/16/2013	Driver:	JOSHUA
3rd Party Ticket:	105520	Vehicle:	1
_			

 Type of Materials
 Quantity
 Area
 Description

 Product
 12.00 yards
 50/51
 50/51

Comments service and s

Generator Certification Statement of Waste Status I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): _______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge _______Other (Provide description above)

R360 Representative (signature)

#### Driver/Agent (signature)

Tank Bottoms

	Feet	Inches		
1st Guage			BS &W/BBLS Received	BS & W
2nd Guage			Free Water	
Received			Total Received	

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n-Exempt Other	5 1914 X	Soil Con	taining	- Field	0.1	*please select fr	rom Non-Exempt Wash	e List on back Un	Lt WestRark
							12 у.		
				B - BARRELS		L - LIQUID			E - EACH
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1



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

NICKERSTABL			
Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/16/2013	Driver:	JOSH
3rd Party Ticket:	105542	Vehicle:	1

 Type of Materials
 Quantity
 Area
 Description

 Product
 Quantity
 Area
 Description

 Contaminated Soil (RCRA Non-Exempt)
 12.00 yards
 50/51

Comments

#### Generator Certification Statement of Warte Status in a construction of the state of

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): ______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

# Driver/Agent (signature) = 50.

 $\left( \right)$ 

Tank Bottoms Feet Inches

1st Guage	BS &W/BBLS Received	BS & W
2nd Guage	Free Water	
Received	Total Received	

1360		NEW MEXICO NO	N-HAZARDOUS O		MANIFEST	Company Man Name	Contact Informatio
ENITROBILITIONS			<b>*</b>			Phone No.	
perator No.	N/A			Location of Origin Lease/Weil	N	°105542	
· · · · · · · · · · · · · · · · · · ·	vajo Refining ( Box 159	Co. LLC		Name & No. County API No.		* /A	
	esia, NM 88211-	-0159	 - ·	Rig Name & No.			
none No. <u>-57</u>	<del>-748-3311</del>			AFE/PO No.	1994 W. THERMONY FRANK	and the second second	
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ater Based Cuttings		duced Water (Non-Injectal			Produced Water (Inje Gathering Line Water	•	
roduced Formation Solids ank Bottoms	(gai	thering Line Water/Waste (	Non-Injectable)	- 1988 - 1988	Gathering the wate	AAste (nijectable)	
&P Contaminated Soll as Plant Waste	Tru	ick Washout (exempt waste	e)			·	
ASTE GENERATION PR	DCESS: 🗌 DRI	ILLING			PRODUCTION	GATHERIN	G LINES
			2				
on-Exempt Other	Soil Contai	ning - Fuel	011		nm Non-Exempt Wast	e list on back $\mathtt{Unit} \omega$	est Kuck
UANTITY		B - BARRELS		L- LIQUID	12 Y-	YARD\$	E - EACH
RCRA EXEMPT:	month only) Oil field waste which I 261,21-261,24, or liste	s non-hazardous that does ed.hazardous waste as defir	not exceed the minim ned by 40 CFR, part 26	um standards for w	aste hazardous by cha	tempt waste (R360 Accepts racteristics established in RC ocumentation demonstratio	RA regulations, 40 C
	MSDS Information	Check the appropriate ite (Check the appropriate	dous Waste Analysis		Other (Provide Descri	ption Below)	
EMERGENCY NON-OI	determination and a d	dous, non-oilfeild waste thi lesciption of the waste mus			f Public Safety (the ord	er, documentation of non-h Mie Hillmer SIGNATURE	azardous waste
ansporter's	othérs Waste S	Corrigio Tro		Driver's Name	<u>لا</u>		· ·
	W. Texas Ave.		<b>4</b>	Print Name	Toshua	Gerslip	
	sía, NM 88210		· · · · · ·	Phone No.			
	6-748-1213		<u> </u>	Truck No.			
ereby certify that the abo	e named material(s) was/wer	e picked up at the Generat	or's site listed above a			sal facility listed below.	$\mathbf{D}$
SHIPMENT DATE		VER'S SIGNATURE	··	7-16-0 DELIVE	2013	Gloshuc -	Le
and the state of the second second	K TIME STAMP	NER S SCHATORE				RECEIVINGARE	-
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te Name/			н на селото на селот Селото на селото на с	Obana Ma	1	·.	
	acility / NM1-006	Č	· · ·	Phone No.	575-393-1079	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · ·
·	er 65 Hwy 62/180 Carlsbad, N		$\rightarrow$				
	INGS TAKEN? (Circle One) FILTER TEST? (Circle One)	YES YES NO	11	NO	ng > 50 micro roentger	ns? (circle one) YES	. NO
						i.	
st Gauge	Feet	Inches		BS8	SW/BBLS Received Free Water Total Received	BS&W (S	6)
I hereby certify that the	ave loud manerial has been t	sirch one): ACCEPT		Studinical will?		Tmz.	
NAME (	81ЛТ)	bate C 1	0.00	TITLE		SIGNATURE	A
-138		batet. 1		TITLE		SIGNATURE	Versior



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACJ
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO;	
Date:	7/16/2013	Driver:	JOSHUA
3rd Party Ticket:	105545	Vehicle:	1
North 15 Octobers an example of the second statement of second statement of second statements and second second			

Type of Materials			
Product	<u>Quantity</u>	<u>Area</u>	Description
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status 1 hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): _______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

Driver/Agent (signature) R360 Representative (signature)

Tank Bottoms

	Feet	Inches		
1st Guage			BS &W/BBLS Received	BS & W
2nd Guage			Free Water	
Received			Total Received	

H36Ø		NEW MEXICO NON-HAZARDOUS OILFEILD WASTE M (PLEASE PRINT)				Name	
Socurans	فسنفذ فضيعها والتكريب	الاردين بيدين المحمد أحداث <del>المركز المتعلقة</del>	1.		, Phone N		
	N/A				No.1055	545	
				Location of Origin Lease/Well		·	
	ajo Refinir	ig Co. LLC		Name & No.			
ress <u>PO</u>	Box 159		·····	County	<u>N/A</u>		
A set o	aia MM 881	11-0159		API No.			
, State, Zip		.11-0155	· · ·	Rig Name & No.		· · · · · · · · · · · · · · · · · · ·	
ne No575	-748-3311			AFE/PO No.		· · · · · · · · · · · · · · · · · · ·	
	an a	a de la companya de l La companya de la comp		s na saiste se Saiste se Saiste se	an a		
Based Muds Based Cuttings		Washout Water (Non-In)	ectable)	17. <u>19. 1</u> 9	Washout Water (Injectable)		
ter Based Muds		Completion Fluid/Flow b	ack (Non-injectable)	·	Completion Fluid/Flow back (Injectable)	le)	
ter Based Cuttings duced Formation Solids	<u> </u>	Produced Water (Non-In Gathering Line Water/W			Produced Water (injectable) Gathering Line Water/Waste (injectal	ble)	
k Bottoms	·	Relation of the second	11111			an a star star star star star star star st	
P Contaminated Soil		Truck Washout (exempt	waste)				
STE GENERATION PRO	CESS:	DRILLING	COMPLETIO	N 🗌		SATHERING LINES	
			* *				
					n de la seguera de la segue Nota		
-Exempt Other	<u>Soil Co</u>	ntaining - <u>P</u>	ucloil	*please select fro	om Non-Exempt Waste List, on back	WP51.KULV	
ANTITY		B - 8AA	RELS	L - LIQUID	12 _{Y - YARDS}	E - EACH	
	to the Resource Conse	rvation and Recovery Act (	CRA) and the US Environ	mental Protection Ag	ency's July 1988 regulatory determinati	ion, the above described waste	
is (Check the appropriate			······				
RCRA EXEMPT:		generated from oil and gas	exploration and production	on operations and are	not mixed with non-exempt waste (R30	60 Accepts certifications on a p	
	month only)				•		
		erer titurahan	بالمتحد مراه المحمد محمد محمد الم		والمغمر مماده ومعصام بربا ورزوا ومحمد والمحمد	School in DCD's populations, 40.0	
RCRA NON-EXEMPT:	Oil field waste w	hich is non-hazardous that	does not exceed the mini	imum standards for wi 261, subnart D, as ám	aste hazardous by characteristics estab ended. The following documentation de	lished in RCRA regulations, 40 C emonstrating the waste as non-	
KCRA NON-EXEMPT:	261.21-261.24,	or listed hazardous waste as	defined by 40 CFR, part 3	imum standards for w 261, subpart D, as ám	raste hazardous by characteristics estab ended. The following documentation de	Nished In RCRA regulations, 40 C emonstrating the waste as non-	
RCRA NON-EXEMPT:	261.21-261.24, hazardous is att	or listed hazardous waste as ached. (Check the appropria	defined by 40 CFR, part i ate items as provided)	261, subpart D, as ám	ended. The following documentation de	lished in RCRA regulations, 40 C emonstrating the waste as non-	
RCRA NON-EXEMPT:	261.21-261.24, hazardous is att	or listed hazardous waste as ached. (Check the appropria on X RCRA F	s defined by 40 CFR, part : ate items as provided) Jazardous Waste Analysis	261, subpart D, as ám	aste hazardous by characteristics estab ended. The following documentation de Other (Provide Description Below)	lished in RCRA regulations, 40 C emonstrating the waste as non-	
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Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

# PERMIAN BASIN REGION

TICKEPS (8268)		<b>和你的意义的物理和</b>		
Bill To:	NAVAJO		Lease:	ARTESIA YARD
Company/Generator:	NAVAJO		Well:	WEST LOADING RACK
Company Man:	MIKE HOLDER		Rig:	
Trucking:	S BROTHERS		PO:	
Date:	7/19/2013		Driver:	GREG
3rd Party Ticket:	117284		Vehicle:	3
Semmants				
Type of Menerals		Quantity	Area Descrip	tion
Contaminated Soil (RC	CRA Non-Exempt)	12.00 yards	50/51	

#### Generator Certification Statement of Waste Status, Company and Company

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):
_______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

Driver/Agent (signature)

Tank Bottoma Two Persons and Provident

	Feet	Inches			
1st Guage			BS &W/BBLS Received	BS & W	V
2nd Guage			Free Water		
Received			Total Received		

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NON-HAZARDOUS WASTE MANIFEST 117284

PART I:	Generator_	Navajo Refining Co. LLC	
	Address	PO Box 159	( 575 ) 748-3311
	City/State_	Artesia, NM 88211-0159	Telephone No.
ORGINATIO	ON OF WAST	'E:	
Operations	Center	Artesla	Permit NoN/A
Property N	ame	West Rack (Well, Tank Battery, Plant, Facility) Rior Ac	occural Obtained
WASTE IDE	ENTIFICATION	AND AMOUNT (BARRELS, YARDS, TONS	, CU.FT., LBS., UNITS, ETC.)
Drilling Fluid		Tank Bottoms	Exempt Fluids
Completion F		Gas Plant Waste	C117 No
Contaminated	l Soil	Other Materials	Pit No
		DESCRIPTION / NOTES	,
<	Sail Canon	Aining Fuel Oil	
		Soil Conteminated with.	·
	·····	12yds	
<u> </u>		1	Part
L		\	Jest KACK
CERTIFICA		waste described above is not hazardous pursuant to 40 CFR	Part 261 and was consigned to the transporter
	nam	ed below. I certify that the foregoing is true and correct to the $1/1$	
	nam		
		ed below. I certify that the foregoing is true and correct to th	
		ed below. I certify that the foregoing is true and correct to the amit Automatical Signature of Generator's Authorized Agent	ne best of my knowledge. 7 - 1 9 - 1 3 Date and Time of Shipment
PART II:		ed below. I certify that the foregoing is true and correct to the	ne best of my knowledge. 7 - 1 9 - 1 3 Date and Time of Shipment
Part II:		ed below. I certify that the foregoing is true and correct to the amit Automatical Signature of Generator's Authorized Agent	ne best of my knowledge. 7 - 1 9 - 1 3 Date and Time of Shipment
PART II:	TRANSPOF	ed below. I certify that the foregoing is true and correct to the annual foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T	Transporter)
PART II:	TRANSPOF Name	ed below. I certify that the foregoing is true and correct to the annut for the second	Transporter)
PART II:	TRANSPOF	ed below. I certify that the foregoing is true and correct to the annut for the second	Transporter)
PART II: CERTIFICA	TRANSPOF Name Address City/State	ed below. I certify that the foregoing is true and correct to the annut for the second	Truck No.
	TRANSPOF Name Address City/State	ed below. I certify that the foregoing is true and correct to the annual distance of Generator's Authorized Agent Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers Ar DESIG	Transporter) Telephone No. 3 Truck No. 2-19-13
	TRANSPOF Name Address City/State	ed below. I certify that the foregoing is true and correct to the annut Automatical Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A, TES/ C	Truck No.
·	TRANSPOF Name Address City/State _ TION: tee	ed below. I certify that the foregoing is true and correct to the annual distance of Generator's Authorized Agent Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers Ar DESIG	Transporter) Telephone No. 3 Truck No. 2-19-13
CERTIFICA	TRANSPOF Name Address City/State TION: teer DISPOSAL	ed below. I certify that the foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A, TES/C rtify that the wasterin quantity above was received by me for Mag Signature of Transporter's Agent OR RECLAMATION SITE:	Transporter) Telephone No. 3 Truck No. 2-19-13
CERTIFICA	TRANSPOF Name Address City/State TION: teer DISPOSAL Name	ed below. I certify that the foregoing is true and correct to the anti-Automatical Agent Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers ArtESICA rtify that the wasterin quantity above was received by me for Signature of Transporter's Agent	Telephone No.
CERTIFICA	TRANSPOF Name Address City/State_ TION: teer DISPOSAL Name Address	ed below. I certify that the foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A + 25/ C High the wasterin quantity above was received by me for Signature of Transporter's Agent OR RECLAMATION SITE: R360 Permian Basin, LLC	Telephone No. 3 Truck No. shipment to the destination below. 2-19-13 Truck No. 3 Date and Time Received (575) 393-1079
CERTIFICA PART III:	TRANSPOF Name Address City/State TION: teer DISPOSAL Name Address City/State	ed below. I certify that the foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A, 125/A rtify that the wasterin quantity above was received by me for Signature of Transporter's Agent OR RECLAMATION SITE: R360 Permian Basin, LLC P.O. Box 388 Hobbs, N.M. 88241-0388	Telephone No. 3 Truck No. shipment to the destination below. 2-19-13 Truck No. 3 Truck No. 4 2-19-13 Date and Time Received (575) 393-1079 Telephone No. www.r360environmentalsolutions.com E-mail
CERTIFICA	TRANSPOF Name Address City/State TION: teer DISPOSAL Name Address City/State	ed below. I certify that the foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A, ACSIA H, CSIA A, CSIA OR RECLAMATION SITE: R360 Permian Basin, LLC P.O. Box 388	Telephone No. 3 Truck No. shipment to the destination below. 2-19-13 Truck No. 3 Truck No. (575) 393-1079 Telephone No. www.r360environmentalsolutions.com E-mail
CERTIFICA PART III:	TRANSPOF Name Address City/State TION: teer DISPOSAL Name Address City/State	ed below. I certify that the foregoing is true and correct to the Signature of Generator's Authorized Agent RTER: (To be completed in full by T S Brothers A, 125/A rtify that the wasterin quantity above was received by me for Signature of Transporter's Agent OR RECLAMATION SITE: R360 Permian Basin, LLC P.O. Box 388 Hobbs, N.M. 88241-0388	Telephone No. 3 Truck No. shipment to the destination below. 2-19-13 Truck No. 3 Truck No. (575) 393-1079 Telephone No. www.r360environmentalsolutions.com E-mail

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TCP - #7520-A

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Halfway Facility 4507 W. Carlsbad Hwy Hobbs, New Mexico 88240



Phone: (575) 393-1079 Fax: (575) 393-3615 WWW.R360ES.COM

#### PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/18/2013	Driver:	GREG
3rd Party Ticket:	117285	Vehicle:	3

 Ope of Materials
 Quantity
 Area
 Description

 Product
 Quantity
 Area
 Description

 Contaminated Soil (RCRA Non-Exempt)
 12.00 yards
 50/51

Comments

Generator Certification Statement of Waste Status I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

___ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

X RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items): _______MSDS Information ______RCRA Hazardous Waste Analysis ______Process Knowledge ______Other (Provide description above)

R360 Representative (signature)

Driver/Agent (signature)

Tank Bottoms

1 L	reet mones		
1st Guage		BS &W/BBLS Received	BS & W
2nd Guage		Free Water	
Received		Total Received	

#### NON-HAZARDOUS WASTE MANIFEST

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-16

Address       P0 Box 159       [575] 748-3311         City/State       Artests, NM 88211-0159       Telephone No.         ORGINATION OF WASTE:       Operations Center       Artesta       Permit No.       N/A         Property Name       Usest       Ruck       Property Name       N/A         Waste IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CUFT., LBS., UNITS, ETC.)       Prilling Fluids       Case Plant, Facility)         Drilling Fluids       Gas Plant Waste       C117 No.       Plant, Pacific No.         Contaminated Soil       Other Materials       Pit No.       Pit No.         DESCRIPTION / NOTES       Soil Contastinated with.       12948       21948         CERTIFICATION:       The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter ranged below.       7-11-73         Signature of Generator's Authorized Agent       Date and firme of Shipmient       21-11-73	PART I:		Navajo Refining Co. LLC	( 575 ) 748-3311	
ORGINATION OF WASTE:         Operations Center       Artesta         Property Name       Wesst Ruck         Waste identification And AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)         Waste identification And AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)         Drilling Fluids         Completion Fluids         Gas Plant Waste         Contaminated Soil         Other Materials         Pit No.         DESCRIPTION / NOTES         Soil Contaminated Soil         DESCRIPTION / NOTES         Soil Contraining Fluids         12yds					
Operations Center       Artesta       Permit No         Property Name		City/State_	Artesis, NM 88211-0159		
Property Name       Usest       Ruck         West       Ruck         Waste IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)         Drilling Fluids       Tank Bottoms         Completion Fluids       Gas Plant Waste         Contaminated Soil       Other Materials         DESCRIPTION / NOTES       7         Soil Contaminated with       12948         CERTIFICATION:       The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. 1 certify that the foregoing is true and correct to the best of my knowledge.	ORGINATIO	N OF WAST	'E:		
(Well, Tank Battery, Plant, Facility)         (Waster integration of the colspan="2">(Well, Tank Battery, Plant, Facility)         (Waster integration of the colspan="2">(Well, Tank Battery, Plant, Facility)         Distribution of the colspan="2">(Well, Tank Battery, Plant, Facility)         Distribution of the colspan="2">(Well, Tank Battery, Plant, Facility)         Distribution of the colspan="2">(Well, Tank Battery, Plant, Facility)         Output         (Well, Tank Battery, Plant, Facility)         (Well, Tank Battery, Plant, Facility)         (Completion Fluids         (Contaminate Soil         (Contaminate Soil         (Contrantine of Contaminate Soil) <td col<="" td=""><td>Operations</td><td>Center</td><td>Artesia</td><td>Permit NoN/A</td></td>	<td>Operations</td> <td>Center</td> <td>Artesia</td> <td>Permit NoN/A</td>	Operations	Center	Artesia	Permit NoN/A
Drilling Fluids			(Well, Tank Battery, Plant, Facility)	and Bloging	
Drilling Fluids	WASTE IDE	NTIFICATION	AND AMOUNT (BARRELS, YARDS, TONS	, CU.FT., LBS., UNITS, ETC.)	
Completion Fluids      Gas Plant Waste      C117 No         Contaminated Soil      Other Materials       Pit No         DESCRIPTION / NOTES          Soil       Contraining Fixe / Oil         Soil       Contraining fixe         12yds					
Contaminated Soil       Other Materials       Pit No.         DESCRIPTION / NOTES       >         Soil Contamining Fixel Oil       >         Bodil Contaminated with       12yds         CERTIFICATION:       The waste described above is not hazardous pursuant to 40 CPR Part 261 and was consigned to the transporter named below. 1 certify that the foregoing is true and correct to the best of my knowledge.         Current Contractory       7-18-1/3	Drilling Fluids	s	Tank Bottoms	Exempt Fluids	
DESCRIPTION / NOTES       2         Soil Contraining Fix / Oil       3         Soil Contraining Fix / Oil       12         12yds       12yds         CERTIFICATION:       The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.         Curve August A	-		Gas Plant Waste	C117 No.	
CERTIFICATION: The waste described above is not hazardous pursuant to 40 CPR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.	Contaminated	Soil	Other Materials	Pit No	
CERTIFICATION: The waste described above is not hazardous pursuant to 40 CPR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.					
Sodil Contaminated with         12yds         CERTIFICATION:         The waste described above is not hazardous pursuant to 40 CPR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.         Quit Hard Hard Hard Hard Hard Hard Hard Hard		<u> </u>		1	
12yds         CERTIFICATION:         The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.         Quive Humanoly         7-18-13			/		
CERTIFICATION: The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.					
named below. I certify that the foregoing is true and correct to the best of my knowledge.					
named below. I certify that the foregoing is true and correct to the best of my knowledge.				·····	
Carrie Article Agent 7-18-13 Date and Time of Shipment	CERTIFICAT		waste described above is not hazardous pursuant to 40 CPR I ed below. I certify that the foregoing is true and correct to th	Part 261 and was consigned to the transporter e best of my knowledge.	
Signature of Generator's Authorized Agent O Date and Time of Shipment		(	amie Almandy	7-18-13	
			Signature of Generator's Authorized Agent 0	Date and Time of Shipment	
PART II: TRANSPORTER: (To be completed in full by Transporter)	Part II:	TRANSPOR	RTER: (To be completed in full by T	ransporter)	
Name <u>S Brothers</u>		Name	S Brothers		
A delation a construction of the second se			)	· _	
City/State Arr Tesi G		City/State_	Artesia		
Truck No.		-	2		
CERTIFICATION: 1 certify that the paste in quantity above was received by me for shipment to the destination below.	CERTIFICAT	TION: 1 ce	rtify that the waste in quantity above was received by me for :	shipment to the destination below.	
Signature of Transporter's Agent Date and Time Received			Signature of Transporter's Avent	Date and Time Received	
PART III: DISPOSAL OR RECLAMATION SITE:	PART III:	DISPOSAL		· · · · · · · · · · · · · · · · · · ·	
Name R360 Permian Basin, LLC (575) 393-1079			P260 Permion Racin LLC	(575) 393-1079	
				www.r360environmentalsolutions.com	
City/State Hobbs, N.M. 88241-0388 www.r360environmentalsolutions.com		OILY STATE_			
CERTIFICATION: I certify that the Waste described in Part Lyas received by me via the transporter described in Part II	CERTIFICA	TION: 1 ce	Maun		
Signature of Facility Agent Date and Time Received		·····	i.		

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Attachment D

Analytical Reports



24-Jul-2013

Aaron Strange Navajo Refining Company PO Box 159 Artesia, NM 88211

Tel: (575) 748-6733 Fax: (575) 746-5421

Re: Fuel Oil Spill- West Loading Rack

Work Order: 1307647

Dear Aaron,

ALS Environmental received 4 samples on 16-Jul-2013 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Sonia West

Electronically approved by: Dayna.Fisher

Sonia West Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887 ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 💭

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client:Navajo Refining CompanyProject:Fuel Oil Spill- West Loading RackWork Order:1307647

# Work Order Sample Summary

Lab Samp ID	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	Collection Date	Date Received	Hold
1307647-01	East 3rd Bay	Solid		7/11/2013 14:35	7/16/2013 09:00	
1307647-02	East 3rd Bay #2	Solid		7/11/2013 14:40	7/16/2013 09:00	
1307647-03	East 2nd Bay	Solid		7/11/2013 14:50	7/16/2013 09:00	
1307647-04	East 1st Bay	Solid		7/11/2013 14:55	7/16/2013 09:00	

Date: 24-Jul-13

____

Date: 24-Jul-13

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	Case Narrative
Work Order:	1307647	

Batch 71724B, TPH DRO/ORO 8015, Sample East 3rd Bay: This sample was analyzed at a 5 x dilution due to matrix interfernce.

Batch 71724B, TPH DRO/ORO 8015, Sample East 3rd Bay #2: This sample was analyzed at a 5 x dilution due to matrix interfernce.

Batch R150673, Volatile Organics 8260, Sample 1307738-01: MS/MSD are for an unrelated sample.

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	<b>Work Order:</b> 1307647
Sample ID:	East 3rd Bay	Lab ID: 1307647-01
<b>Collection Date:</b>	7/11/2013 02:35 PM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	od: <b>SW8015M</b>		Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	3.5	J	2.5	8.5	mg/Kg	5	7/23/2013 15:47
Surr: 2-Fluorobiphenyl	103			60-135	%REC	5	7/23/2013 15:47
GASOLINE RANGE ORGANICS - SW80150	;	Meth	od:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 22:42
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 22:42
VOLATILES - SW8260C		Meth	od: <b>SW8260</b>				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/18/2013 13:15
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/18/2013 13:15
Toluene	U		0.70	5.0	µg/Kg	1	7/18/2013 13:15
Xylenes, Total	U		1.7	10	µg/Kg	1	7/18/2013 13:15
Surr: 1,2-Dichloroethane-d4	97.0			70-128	%REC	1	7/18/2013 13:15
Surr: 4-Bromofluorobenzene	101			73-126	%REC	1	7/18/2013 13:15
Surr: Dibromofluoromethane	96.1			71-128	%REC	1	7/18/2013 13:15
Surr: Toluene-d8	100			73-127	%REC	1	7/18/2013 13:15

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	Work Order: 1307647
Sample ID:	East 3rd Bay #2	Lab ID: 1307647-02
<b>Collection Date:</b>	7/11/2013 02:40 PM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metho	d:SW8015M	ſ	Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	U		2.5	8.5	mg/Kg	5	7/23/2013 15:47
Surr: 2-Fluorobiphenyl	65.2			60-135	%REC	5	7/23/2013 15:47
GASOLINE RANGE ORGANICS - SW80150	2	Metho	d:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 22:58
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 22:58
VOLATILES - SW8260C		Metho	d:SW8260				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/18/2013 13:43
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/18/2013 13:43
Toluene	U		0.70	5.0	µg/Kg	1	7/18/2013 13:43
Xylenes, Total	U		1.7	10	µg/Kg	1	7/18/2013 13:43
Surr: 1,2-Dichloroethane-d4	96.9			70-128	%REC	1	7/18/2013 13:43
Surr: 4-Bromofluorobenzene	98.8			73-126	%REC	1	7/18/2013 13:43
Surr: Dibromofluoromethane	95.0			71-128	%REC	1	7/18/2013 13:43
Surr: Toluene-d8	102			73-127	%REC	1	7/18/2013 13:43

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	<b>Work Order:</b> 1307647
Sample ID:	East 2nd Bay	Lab ID: 1307647-03
<b>Collection Date:</b>	7/11/2013 02:50 PM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Method	d:SW8015M		Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	U		0.50	1.7	mg/Kg	1	7/23/2013 16:11
Surr: 2-Fluorobiphenyl	70.8			60-135	%REC	1	7/23/2013 16:11
GASOLINE RANGE ORGANICS - SW801	5C	Method	:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 23:14
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 23:14
VOLATILES - SW8260C		Method	d:SW8260				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/19/2013 23:39
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/19/2013 23:39
Toluene	U		0.70	5.0	µg/Kg	1	7/19/2013 23:39
Xylenes, Total	U		1.7	10	µg/Kg	1	7/19/2013 23:39
Surr: 1,2-Dichloroethane-d4	90.3			70-128	%REC	1	7/19/2013 23:39
Surr: 4-Bromofluorobenzene	92.8			73-126	%REC	1	7/19/2013 23:39
Surr: Dibromofluoromethane	96.0			71-128	%REC	1	7/19/2013 23:39
Surr: Toluene-d8	100			73-127	%REC	1	7/19/2013 23:39

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	Work Order: 1307647
Sample ID:	East 1st Bay	Lab ID: 1307647-04
<b>Collection Date:</b>	7/11/2013 02:55 PM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metho	d:SW8015M	l	Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	14		2.5	8.5	mg/Kg	5	7/23/2013 16:11
Surr: 2-Fluorobiphenyl	69.8			60-135	%REC	5	7/23/2013 16:11
GASOLINE RANGE ORGANICS - SW80150	;	Metho	d:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 23:30
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 23:30
VOLATILES - SW8260C		Metho	d:SW8260				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/20/2013 00:06
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/20/2013 00:06
Toluene	U		0.70	5.0	µg/Kg	1	7/20/2013 00:06
Xylenes, Total	U		1.7	10	µg/Kg	1	7/20/2013 00:06
Surr: 1,2-Dichloroethane-d4	85.4			70-128	%REC	1	7/20/2013 00:06
Surr: 4-Bromofluorobenzene	96.1			73-126	%REC	1	7/20/2013 00:06
Surr: Dibromofluoromethane	98.1			71-128	%REC	1	7/20/2013 00:06
Surr: Toluene-d8	98.6			73-127	%REC	1	7/20/2013 00:06

Client:	Navajo Refining Company
Work Order:	1307647
Project:	Fuel Oil Spill- West Loading Rack

#### Date: 24-Jul-13

# **QC BATCH REPORT**

Batch ID: 71724B Instrument ID FID-7

Method: SW8015M

MBLK Sample I	D: FBLKS1-130723-71724B				ι	Jnits: mg/	Kq	Analys	sis Date: 7/	23/2013 1	1:22 AM
Client ID:		n ID: <b>FID-7_</b> ^	130723A			qNo: 3296	0	Prep Date: 7/2		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7									
Surr: 2-Fluorobiphen	yl 2.729	0.10	3.33		0	82	60-135	C	)		
LCS Sample I	D: FLCSS1-130723-71724B				ι	Jnits: <b>mg/</b>	Kg	Analys	sis Date: <b>7/</b> 2	23/2013 1	1:46 AM
Client ID:	Rur	n ID: <b>FID-7</b> _^	130723A		Se	qNo: <b>3296</b>	6808	Prep Date: 7/2	3/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	31.3	1.7	33.33		0	93.9	70-130				
Surr: 2-Fluorobiphen	<i>yl</i> 2.418	0.10	3.33		0	72.6	60-135	C	)		
MS Sample I	D: 1307728-01BMS				ι	Jnits: <b>mg/</b>	Kg	Analys	sis Date: <b>7/</b> 2	23/2013 1	2:57 PM
Client ID:	Rur	n ID: <b>FID-7_</b>	130723A		Se	qNo: <b>3296</b>	6810	Prep Date: 7/2	3/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	36.51	1.7	33.32	3.18	32	100	70-130				
Surr: 2-Fluorobiphen	yl 2.605	0.10	3.329		0	78.3	60-135	C	)		
MSD Sample I	D: 1307728-01BMSD				ι	Jnits: <b>mg/</b>	Kg	Analys	sis Date: <b>7/</b> 2	23/2013 0	1:20 PM
Client ID:	Rur	n ID: <b>FID-7</b> _^	130723A		Se	qNo: <b>3296</b>	6811	Prep Date: 7/2	3/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	34.65	1.7	33.33	3.18	32	94.4	70-130	36.51	5.23	30	
Surr: 2-Fluorobiphen	yl 2.656	0.10	3.33		0	79.8	60-135	2.605	5 1.93	30	
The following sample:	s were analyzed in this batcl		307647-01C 307647-04C	13	076	47-02C	13	07647-03C			

#### **QC BATCH REPORT**

Batch ID: R150980 Instrument ID FID-14 Method: SW8015 MBLK Sample ID: GBLKS-130723-R150980 Units: mg/Kg Analysis Date: 7/23/2013 07:29 PM Client ID: Prep Date: DF: 1 Run ID: FID-14 130723A SeqNo: 3296984 RPD SPK Ref RPD Ref Control Value Value Limit Limit PQL SPK Val %REC %RPD Qual Analyte Result U 0.050 Gasoline Range Organics Surr: 4-Bromofluorobenzene 0.1038 0.0050 0 70-130 0 0.1 104 LCS Sample ID: GLCSS-130723-R150980 Units: mg/Kg Analysis Date: 7/23/2013 07:13 PM Client ID: Run ID: FID-14_130723A SeqNo: 3296983 Prep Date: DF: 1 RPD SPK Ref **RPD** Ref Control Value Limit Value Limit %REC %RPD Qual Analyte Result PQL SPK Val 0.050 Gasoline Range Organics 1.152 1 0 115 70-130 0.0050 0 Surr: 4-Bromofluorobenzene 0.1032 0.1 103 70-130 0 MS Sample ID: 1307728-01BMS Analysis Date: 7/23/2013 10:10 PM Units: mg/Kg SeqNo: 3296993 Client ID: Run ID: FID-14_130723A Prep Date: DF: 1 RPD SPK Ref **RPD** Ref Control Value Limit Value Limit %REC %RPD Qual Analyte Result PQL SPK Val Gasoline Range Organics 0.9546 0.050 1 0 95.5 70-130 Surr: 4-Bromofluorobenzene 0.1077 0.0050 0.1 0 108 70-130 0 MSD Sample ID: 1307728-01BMSD Units: mg/Kg Analysis Date: 7/23/2013 10:26 PM Client ID: Run ID: FID-14_130723A SeqNo: 3296994 Prep Date: DF: 1 RPD SPK Ref **RPD** Ref Control Value Value Limit Limit Result PQL SPK Val %REC %RPD Qual Analyte 1.003 0.050 0 100 30 Gasoline Range Organics 1 70-130 0.9546 4.97 0.1076 0.0050 0.0762 Surr: 4-Bromofluorobenzene 0.1 0 108 70-130 0.1077 30 1307647-01A 1307647-02A 1307647-03A The following samples were analyzed in this batch: 1307647-04A

# QC BATCH REPORT

Batch ID: R150673	Instrument ID VOA3		Metho	: SW826	60						
MBLK Sample ID: V	/BLKS1-071813-R150673				Units: µg/I	٨g	Analysis Date: 7/18/2013 09:35 A				
Client ID:	Run II	D: VOA3_	130718A		SeqNo: 3292440		Prep Date:	DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	U	5.0									
1,1,2,2-Tetrachloroethane	U	5.0									
1,1,2-Trichloroethane	U	5.0									
1,1-Dichloroethane	U	5.0									
1,1-Dichloroethene	U	5.0									
1,2-Dibromoethane	U	5.0									
1,2-Dichloroethane	U	5.0									
Benzene	U	5.0									
Carbon tetrachloride	U	5.0									
Chloroform	U	5.0									
Ethylbenzene	U	5.0									
Methylene chloride	U	10									
Tetrachloroethene	U	5.0									
Toluene	U	5.0									
Trichloroethene	U	5.0									
Vinyl chloride	U	2.0									
Xylenes, Total	U	10									
Surr: 1,2-Dichloroethane	<i>-d4</i> 46.01	0	50		0 92	70-128		0			
Surr: 4-Bromofluorobenz	ene 49.75	0	50		0 99.5	73-126		0			
Surr: Dibromofluorometh	ane 45.34	0	50		0 90.7	71-128	1	0			
Surr: Toluene-d8	49.48	0	50		0 99	73-127		0			

# QC BATCH REPORT

Fuel Oil Spill- West Loading Rack **Project:** 

Batch ID: R150673	Instrument ID VOA3		Metho	: SW826	0						
LCS Sample ID: V	LCSS1-071813-R150673				ι	Jnits: µg/ŀ	٢g	Analy	vsis Date: 7	/18/2013	08:15 AM
Client ID:	Run I	D: VOA3_	130718A		Se	qNo: <b>329</b> 2	2439	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	61.11	5.0	50		0	122	79-124				
1,1,2,2-Tetrachloroethane	46.12	5.0	50		0	92.2	75-123				
1,1,2-Trichloroethane	46.74	5.0	50		0	93.5	79-120				
1,1-Dichloroethane	54.11	5.0	50		0	108	75-124				
1,1-Dichloroethene	50.23	5.0	50		0	100	80-122				
1,2-Dibromoethane	47.19	5.0	50		0	94.4	79-120				
1,2-Dichloroethane	53.88	5.0	50		0	108	73-121				
Benzene	57.88	5.0	50		0	116	79-120				
Carbon tetrachloride	58.56	5.0	50		0	117	74-126				
Chloroform	54.67	5.0	50		0	109	78-120				
Ethylbenzene	52.66	5.0	50		0	105	80-122				
Methylene chloride	45.55	10	50		0	91.1	62-130				
Tetrachloroethene	51.52	5.0	50		0	103	73-129				
Toluene	53.63	5.0	50		0	107	79-120				
Trichloroethene	55.75	5.0	50		0	111	80-121				
Vinyl chloride	54.28	2.0	50		0	109	76-126				
Xylenes, Total	159.8	10	150		0	107	80-120				
Surr: 1,2-Dichloroethane	-d4 52.76	0	50		0	106	70-128		0		
Surr: 4-Bromofluorobenz	ene 51.19	0	50		0	102	73-126		0		
Surr: Dibromofluorometh	ane 50.83	0	50		0	102	71-128		0		
Surr: Toluene-d8	49.18	0	50		0	98.4	73-127		0		

# QC BATCH REPORT

Fuel Oil Spill- West Loading Rack **Project:** 

Batch ID: R150673	Instrument ID VOA3		Metho	d: SW8260	0							
MS Sample ID: 1	307738-01AMS				Un	nits: µg/K	ζg	Analysis Date: 7/18/2013 11:51 Al				
Client ID:	Ru	n ID: <b>VOA3_</b>	130718A		SeqNo: 3292442		Prep Date:	DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	59.6	5.0	50		0	119	79-124					
1,1,2,2-Tetrachloroethane	26.91	5.0	50		0	53.8	75-123				S	
1,1,2-Trichloroethane	44.77	5.0	50		0	89.5	79-120					
1,1-Dichloroethane	50.23	5.0	50		0	100	75-124					
1,1-Dichloroethene	48.4	5.0	50		0	96.8	80-122					
1,2-Dibromoethane	43.75	5.0	50		0	87.5	79-120					
1,2-Dichloroethane	51.65	5.0	50		0	103	73-121					
Benzene	55.97	5.0	50		0	112	79-120					
Carbon tetrachloride	50.67	5.0	50		0	101	74-126					
Chloroform	53.02	5.0	50		0	106	78-120					
Ethylbenzene	51.99	5.0	50		0	104	80-122					
Methylene chloride	42.55	10	50		0	85.1	62-130					
Tetrachloroethene	81.35	5.0	50		0	163	73-129				S	
Toluene	52.48	5.0	50		0	105	79-120					
Trichloroethene	89.84	5.0	50	4.88	37	170	80-121				S	
Vinyl chloride	50.85	2.0	50		0	102	76-126					
Xylenes, Total	153.8	10	150		0	103	80-120					
Surr: 1,2-Dichloroethane	-d4 50.44	0	50		0	101	70-128		0			
Surr: 4-Bromofluorobenz	ene 49.36	0	50		0	98.7	73-126		0			
Surr: Dibromofluorometh	ane 48.53	0	50		0	97.1	71-128		0			
Surr: Toluene-d8	49.46	0	50		0	98.9	73-127		0			

**Project:** Fuel Oil Spill- West Loading Rack

Instrument ID VOA3

Method: SW8260

MSD Sample ID: 1307738-01	MSD Sample ID: 1307738-01AMSD					٢g	Analysis Date: 7/18/2013 12:1				
Client ID:	Run I	S	GeqNo: <b>329</b>	2443	Prep Date:						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	60.33	5.0	50	0	121	79-124	59.6	1.22	30		
1,1,2,2-Tetrachloroethane	30.77	5.0	50	0	61.5	75-123	26.91	13.4	30	S	
1,1,2-Trichloroethane	46.95	5.0	50	0	93.9	79-120	44.77	4.74	30		
1,1-Dichloroethane	50.18	5.0	50	0	100	75-124	50.23	0.0952	30		
1,1-Dichloroethene	49.29	5.0	50	0	98.6	80-122	48.4	1.82	30		
1,2-Dibromoethane	46.51	5.0	50	0	93	79-120	43.75	6.1	30		
1,2-Dichloroethane	52.31	5.0	50	0	105	73-121	51.65	1.27	30		
Benzene	58.12	5.0	50	0	116	79-120	55.97	3.77	30		
Carbon tetrachloride	50.44	5.0	50	0	101	74-126	50.67	0.454	30		
Chloroform	53.82	5.0	50	0	108	78-120	53.02	1.5	30		
Ethylbenzene	54.26	5.0	50	0	109	80-122	51.99	4.27	30		
Methylene chloride	42.51	10	50	0	85	62-130	42.55	0.113	30		
Tetrachloroethene	85.65	5.0	50	0	171	73-129	81.35	5.15	30	S	
Toluene	55.48	5.0	50	0	111	79-120	52.48	5.56	30		
Trichloroethene	79.73	5.0	50	4.887	150	80-121	89.84	11.9	30	S	
Vinyl chloride	51.35	2.0	50	0	103	76-126	50.85	0.972	30		
Xylenes, Total	162.4	10	150	0	108	79-123	153.8	5.43	30		
Surr: 1,2-Dichloroethane-d4	50.19	0	50	0	100	70-128	50.44	0.486	30		
Surr: 4-Bromofluorobenzene	51.26	0	50	0	103	73-126	49.36	3.79	30		
Surr: Dibromofluoromethane	48.29	0	50	0	96.6	71-128	48.53	0.496	30		
Surr: Toluene-d8	50.84	0	50	0	102	73-127	49.46	2.76	30		

#### **QC BATCH REPORT**

Batch ID: R150812 Instrument ID VOA3 Method: SW8260 Sample ID: VBLKS2-071913-R150812 Units: µg/Kg Analysis Date: 7/19/2013 09:24 PM MBLK Prep Date: DF: 1 Client ID: Run ID: VOA3_130719B SeqNo: 3294120 SPK Ref RPD Ref RPD Control Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual Benzene U 5.0 Ethylbenzene U 5.0 Toluene U 5.0 Xylenes, Total U 10 Surr: 1,2-Dichloroethane-d4 43.9 0 50 0 87.8 70-128 0 Surr: 4-Bromofluorobenzene 47.73 0 50 0 95.5 73-126 0 0 47.26 50 0 0 Surr: Dibromofluoromethane 94.5 71-128 0 Surr: Toluene-d8 0 50.5 50 101 73-127 0 ID. 1/1 0000 074040 D450040 -----. ... ~ 1100 ..... . . . aia Dat

LCS	Sample ID: VLCSS2-071913-R150812					Units: µg/I	Kg	Analysis Date: 7/19/2013 08:02				
Client ID:		Run II	D: VOA3_	130719B	\$	SeqNo: <b>329</b>	4119	Prep Date:		DF: <b>1</b>		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene		50.84	5.0	50	C	) 102	79-120					
Ethylbenzer	ne	53.95	5.0	50	C	) 108	80-122					
Toluene		49.91	5.0	50	C	) 99.8	79-120					
Xylenes, To	tal	154.9	10	150	C	) 103	80-120					
Surr: 1,2-	Dichloroethane-d4	50.07	0	50	(	0 100	70-128	}	0			
Surr: 4-B	romofluorobenzene	48.79	0	50	C	97.6	73-126	3	0			
Surr: Dibi	romofluoromethane	51.66	0	50	(	) 103	71-128	}	0			
Surr: Tolu	uene-d8	49.56	0	50	C	99.1	73-127	,	0			

MS	MS Sample ID: 1307827-01AMS				U	nits: µg/ŀ	٤g	Analysis Date: 7/19/2013 10:18 F					
Client ID:		Run I	D: <b>VOA3</b> _1	I 30719B		Sec	4No: <b>329</b> 4	122	Prep Date:	DF: <b>1</b>			
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene		52.84	5.0	50		0	106	79-120					
Ethylbenzer	ne	54.24	5.0	50		0	108	80-122					
Toluene		53.59	5.0	50		0	107	79-120					
Xylenes, To	otal	159.3	10	150		0	106	80-120					
Surr: 1,2-	Dichloroethane-d4	49.43	0	50		0	98.9	70-128		0			
Surr: 4-B	Bromofluorobenzene	50.59	0	50		0	101	73-126		0			
Surr: Dib	promofluoromethane	50.67	0	50		0	101	71-128		0			
Surr: Tol	luene-d8	50.29	0	50		0	101	73-127		0			

Batch ID: R150812 Instrument ID VOA3 Method: SW8260 Analysis Date: 7/19/2013 10:45 PM Sample ID: 1307827-01AMSD MSD Units: µg/Kg Prep Date: Client ID: SeqNo: 3294123 DF: 1 Run ID: VOA3_130719B RPD SPK Ref Control **RPD** Ref Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual 51.95 5.0 0 104 30 Benzene 50 79-120 52.84 1.7 52 5.0 0 Ethylbenzene 50 104 80-122 54.24 4.22 30 5.0 0 Toluene 51.12 50 102 79-120 53.59 4.71 30 Xylenes, Total 154.5 10 150 0 103 159.3 79-123 3.09 30 Surr: 1,2-Dichloroethane-d4 48.59 0 50 0 97.2 70-128 49.43 1.72 30 Surr: 4-Bromofluorobenzene 49.36 0 50 0 50.59 98.7 73-126 2.47 30 0 Surr: Dibromofluoromethane 50 0 50.47 101 71-128 50.67 0.389 30 0 Surr: Toluene-d8 49.46 50 0 98.9 73-127 50.29 1.65 30 The following samples were analyzed in this batch: 1307647-03A 1307647-04A

PDS

PQL

SD

SDL

TRRP

**Units Reported** 

 $\mu g/Kg$ 

mg/Kg

Post Digestion Spike

Serial Dilution

Practical Quantitation Limit

Texas Risk Reduction Program

Micrograms per Kilogram Milligrams per Kilogram

Sample Detection Limit

Description

Client: Project: WorkOrder:	Navajo Refining Company Fuel Oil Spill- West Loading Rack 1307647	QUALIFIERS, ACRONYMS, UNITS
Qualifier	Description	
*	Value exceeds Regulatory Limit	
а	Not accredited	
В	Analyte detected in the associated Method Blank above the Reporting	g Limit
Е	Value above quantitation range	
Н	Analyzed outside of Holding Time	
J	Analyte detected below quantitation limit	
М	Manually integrated, see raw data for justification	
n	Not offered for accreditation	
ND	Not Detected at the Reporting Limit	
0	Sample amount is $> 4$ times amount spiked	
Р	Dual Column results percent difference > 40%	
R	RPD above laboratory control limit	
S	Spike Recovery outside laboratory control limits	
U	Analyzed but not detected above the MDL	
Acronym	Description	
DCS	Detectability Check Study	
DUP	Method Duplicate	
LCS	Laboratory Control Sample	
LCSD	Laboratory Control Sample Duplicate	
MBLK	Method Blank	
MDL	Method Detection Limit	
MQL	Method Quantitation Limit	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	

Date: 24-Jul-13

#### Sample Receipt Checklist

Client Name: NAVAJO REFINING	Γ	Date/Time Received:	<u>16-Jul-13 (</u>	<u>09:00</u>
Work Order: <u>1307647</u>	F	Received by:	<u>LOT</u>	
Checklist completed by <u>Robert D. Aarria</u> 1 eSignature	6-Jul-13 Revie	ewed by: Sania Resignature	Veat	18-Jul-13 Date
Matrices:solidsCarrier name:FedEx				
Shipping container/cooler in good condition?	Yes 🗹	No 🗌 Not Pre	esent	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌 Not Pre	esent	
Custody seals intact on sample bottles?	Yes	No 🗌 Not Pre	esent 🗹	
Chain of custody present?	Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?	Yes 🔽	No 🗌		
Chain of custody agrees with sample labels?	Yes 🗸	No 🗌		
Samples in proper container/bottle?	Yes 🗹	No 🗌		
Sample containers intact?	Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌		
All samples received within holding time?	Yes 🗹	No 🗌		
Container/Temp Blank temperature in compliance?	Yes 🗹	No 🗌		
Temperature(s)/Thermometer(s):	1.0c/1.0c c/u	<u> </u>	<u>R1</u>	
Cooler(s)/Kit(s):	9260			
Date/Time sample(s) sent to storage:	7/16/13 17:00			_
Water - VOA vials have zero headspace?	Yes 🗋	No 🗌 No VOA vi	als submitted	$\checkmark$
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌 N/A 🗹		
pH adjusted? pH adjusted by:	Yes 🗌	No 🗌 N/A 🗹		

Login Notes:

Date Contacted:	Person Contacted:
Regarding:	
	SI

_____

 [J] ALS Laboratory Group 10450 Stancliff Rd. #210 Houston, Texas 77099 (Tel) 281.530.5656 (Fax) 281.530.5887

> N L V

**Chain of Custody Form** 

Page 1 of 1

1307647

NAVAJO REFINING: Navajo Refining Company

Project: Fuel Oil Spill- West Loading Rack

			M	ALS Project Manager: Sonia West	lager: Son	lia West												
	Cus	Customer Information		Project Information	rmation					Paran	leter/N	Parameter/Method Request for Analysis	Requ	est for	. Analy	sis		
	Purchase Order		Project Nan	Project Name Fuel Oil Spill - West Loading Rack	III - West L	oading R	ack	A Ser	Semi-Volatiles	les								
<u> </u>	Work Order		Project Number	er				B TPH	_									
	Company Name	Company Name Navajo Refining Company	Bill To Compa	Bill To Company Navajo Refining Company	ning Com	pany		c DRO										
]	Send Report To	Send Report To Aaron Strange	Invoice Att	Invoice Attn. Aaron Strange	ıge			D ORO										
								E GRO										
	Address	Address P. O. Box 159	Addre	Address 501 East Main				F V	VOC (	È	r.C.R	3 for G. Andes 7-16-13	1-11-	0				
	City/State/Zip	City/State/Zip Artesia, New Mexico 88211-0159	City/State/2	City/State/Zip Artesia, New Mexico 88210	w Mexico	88210		U		-								[
L	Phone	Phone (575) 748-3311	Pho	Phone (575) 748-3311	311			Ŧ										
	Fax	Fax (575) 746-5451	ι Γ	Fax (575) 746-5451	151													
	e-Mail Address	e-Mail Address A.Strange@tholivfrontier.com	e-Mail Addre	e-Mail Address A. Strange@holl/frontier.com	hollyfrontie	er.com		Ŀ				Ø		Q.,0				
ŝ	6	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	6	U		<u>у</u> ц. 	È-	ļ	t. T		Hold	р
5	East 3rd Bay	V	7/11/13	14:35	Solid	None		×	×	×	×	X ×	5.7					
N	East 3rd Bay #2	y #2	7/11/13	14:40	Solid	None	с	×	×	×	×	×	~7					
с, 	3 East 2nd Bay	ŷ	7/11/13	14:50	Solid	None	9	×	×	×	×	××						
4	East 1st Bay	٨	7/11/13	14:55	Solid	None	3	×	×	×	×	×						
47	5 Temperature Blank	e Blank																
9																		
~																		
8	-																	
6																		
10	0																	
Sar	Sampler(s): Please Print & Sign		Shipmen	Shipment Method:	Requ	Required Turnaround Time:	around T	ime:			Other			Results	Results Due Date:	ate:		
ê	Glen Rhodes	glen Rhoder		Federal Express	0	STD 10 Wk Days		🗌 5 Wk Days		2 Wk Days		🔲 24 Hour	La La					1
Rell	Retinquished by: Re. K	Olorlea Date: 7/15/13	Time: Re	Received by:	It.	6/13 (J	202	Notes:	8		i							
Reli	Relinquished by:	Date:	Time: Re	Received by Laboratory)	tory):	-			Conlor Tomo	No.	ackage	QC Package: (Check Box Below)	: Box B	elow)				
	\$			1						1000	Level	Level II: Standard QC	idard Q	c S	$\square$	TRRP-C	TRRP-Checklist	
ŝ	Logged by (Laboratory):	Date:	Time: Ch	Checked by (Laboratory):	ory):				01		Level	Level III: Std QC + Raw Data	QC + 1	ƙaw Da	ıta -	TRRP Level IV	evel IV	
			5353 14 X					1	Ş	1	Level	Level IV: SW846 CLP-Like	846 CI	.P-Like				
2	Preservative Key: 1-HCL	2-HNO3 3-H2SO4	4-NaOH 5-Na2S2O3	5-Na2SZO3 6-NaHSO4	7-Other	8-4 deç	8-4 degrees C	9-5035	2	10000	Other:						ĺ	
Not	e: Any changes mu:	Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.	OC Form have been su	ibmitted to ALS	Laboratory	Group.					Copyr	Copyright 2008 by ALS Laboratory Group	by ALS	Laborat	tory Grot	đ		



ALS Environmental 10450 Stanclif/ Rd., Suite Houston, Texas 77093 Tel. +1 281 530 5656 CUSTODY SEAL ALS 7 Date: - 13 Gl Name: Time: 15 20 Fax. +1 281 530 5887 Company: h Navajo Refining

19 of 19



24-Jul-2013

Aaron Strange Navajo Refining Company PO Box 159 Artesia, NM 88211

Tel: (575) 748-6733 Fax: (575) 746-5421

Re: Fuel Oil Spill- West Loading Rack

Work Order: 1307705

Dear Aaron,

ALS Environmental received 4 samples on 17-Jul-2013 08:55 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Sonia West

Electronically approved by: Dayna.Fisher

Sonia West Project Manager



Certificate No: T104704231-13-12

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Date: 24-Jul-13

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Client:	Navajo Refining Company
Project:	Fuel Oil Spill- West Loading Rack
Work Order:	1307705

# Work Order Sample Summary

<u>Lab Samp II</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<b>Collection Date</b>	Date Received	<u>Hold</u>
1307705-01	Site#1 - 2nd Bay	Solid			7/17/2013 08:55	
1307705-02	Site#2 - 2nd Bay	Solid		7/16/2013 08:30	7/17/2013 08:55	
1307705-03	Site#3 - 2nd Bay	Solid		7/16/2013 08:35	7/17/2013 08:55	
1307705-04	Site#4 - 2nd Bay	Solid		7/16/2013 08:40	7/17/2013 08:55	

Date: 24-Jul-13

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	<b>Case Narrative</b>
Work Order:	1307705	

Óæa&@ÁFÏGIÉÁ/ÚPÁÖÜUÐUÜUÁI€FÍÉÁÙæ{] |^ÁÙãc^ÀIÁÉAG}åÁÓæੰKÁ/@Aŕĭ¦¦[*æc^Á^&[ç^¦^Á, ærÁsáĭc^å [ĭd45jÁc@ÁI€Á¢Ásáĭcā[}ÈÁ Á

. Óæa&@/ÜFÍ€ÌFÌÊ£K[|æa‡1^ÁU¦*æ}a&•Á`G΀ÊÂÙæ{]|^ÁFHEÏÏÏIËEÏOBEÁTÙÐ TÙÖÁæ5^Á{[¦Áæ}}Á`}¦^|æe^åÁ≈æ{]|^È

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	<b>Work Order:</b> 1307705
Sample ID:	Site#1 - 2nd Bay	Lab ID: 1307705-01
<b>Collection Date:</b>	7/16/2013 08:25 AM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metho	d:SW8015N	1	Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	4.0		0.50	1.7	mg/Kg	1	7/24/2013 10:04
Surr: 2-Fluorobiphenyl	61.3			60-135	%REC	1	7/24/2013 10:04
GASOLINE RANGE ORGANICS - SW8015	С	Metho	d:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/24/2013 00:35
Surr: 4-Bromofluorobenzene	106			70-130	%REC	1	7/24/2013 00:35
VOLATILES - SW8260C		Metho	d:SW8260				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 13:17
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 13:17
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 13:17
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 13:17
Surr: 1,2-Dichloroethane-d4	93.4			70-128	%REC	1	7/22/2013 13:17
Surr: 4-Bromofluorobenzene	96.8			73-126	%REC	1	7/22/2013 13:17
Surr: Dibromofluoromethane	95.3			71-128	%REC	1	7/22/2013 13:17
Surr: Toluene-d8	97.3			73-127	%REC	1	7/22/2013 13:17

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	<b>Work Order:</b> 1307705
Sample ID:	Site#2 - 2nd Bay	Lab ID: 1307705-02
<b>Collection Date:</b>	7/16/2013 08:30 AM	Matrix: SOLID

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Method:SW801	5M	Prep: SW	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	23	0.5	) 1.7	mg/Kg	1	7/24/2013 10:28
Surr: 2-Fluorobiphenyl	64.9		60-135	%REC	1	7/24/2013 10:28
GASOLINE RANGE ORGANICS - SW8015C		Method: SW801	5			Analyst: KKP
Gasoline Range Organics	U	0.020	0.050	mg/Kg	1	7/24/2013 00:51
Surr: 4-Bromofluorobenzene	108		70-130	%REC	1	7/24/2013 00:51
VOLATILES - SW8260C		Method:SW826	60			Analyst: WLR
Benzene	U	0.6	5.0	µg/Kg	1	7/22/2013 17:15
Ethylbenzene	U	0.9	5.0	µg/Kg	1	7/22/2013 17:15
Toluene	U	0.70	5.0	µg/Kg	1	7/22/2013 17:15
Xylenes, Total	U	1.7	7 10	µg/Kg	1	7/22/2013 17:15
Surr: 1,2-Dichloroethane-d4	91.4		70-128	%REC	1	7/22/2013 17:15
Surr: 4-Bromofluorobenzene	96.0		73-126	%REC	1	7/22/2013 17:15
Surr: Dibromofluoromethane	99.5		71-128	%REC	1	7/22/2013 17:15
Surr: Toluene-d8	99.2		73-127	%REC	1	7/22/2013 17:15

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	Work Order: 1307705
Sample ID:	Site#3 - 2nd Bay	Lab ID: 1307705-03
<b>Collection Date:</b>	7/16/2013 08:35 AM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	nod:SW8015M		Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	14		0.50	1.7	mg/Kg	1	7/23/2013 14:13
Surr: 2-Fluorobiphenyl	67.0			60-135	%REC	1	7/23/2013 14:13
GASOLINE RANGE ORGANICS - SW80150	2	Meth	nod:SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/24/2013 01:07
Surr: 4-Bromofluorobenzene	109			70-130	%REC	1	7/24/2013 01:07
VOLATILES - SW8260C		Meth	nod:SW8260				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 13:41
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 13:41
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 13:41
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 13:41
Surr: 1,2-Dichloroethane-d4	90.7			70-128	%REC	1	7/22/2013 13:41
Surr: 4-Bromofluorobenzene	95.3			73-126	%REC	1	7/22/2013 13:41
Surr: Dibromofluoromethane	96.6			71-128	%REC	1	7/22/2013 13:41
Surr: Toluene-d8	99.4			73-127	%REC	1	7/22/2013 13:41

Client:	Navajo Refining Company	
Project:	Fuel Oil Spill- West Loading Rack	Work Order: 1307705
Sample ID:	Site#4 - 2nd Bay	Lab ID: 1307705-04
<b>Collection Date:</b>	7/16/2013 08:40 AM	Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	od: <b>SW8015M</b>		Prep: SW3	3541 / 7/23/13	Analyst: RPM
TPH (Diesel Range)	1,200		37	130	mg/Kg	50	7/23/2013 18:25
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	50	7/23/2013 18:25
GASOLINE RANGE ORGANICS - SW8015C		Meth	od: <b>SW8015</b>				Analyst: KKP
Gasoline Range Organics	0.15		0.020	0.050	mg/Kg	1	7/24/2013 01:23
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/24/2013 01:23
VOLATILES - SW8260C		Meth	od: <b>SW8260</b>				Analyst: WLR
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 14:05
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 14:05
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 14:05
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 14:05
Surr: 1,2-Dichloroethane-d4	92.6			70-128	%REC	1	7/22/2013 14:05
Surr: 4-Bromofluorobenzene	96.0			73-126	%REC	1	7/22/2013 14:05
Surr: Dibromofluoromethane	96.3			71-128	%REC	1	7/22/2013 14:05
Surr: Toluene-d8	97.6			73-127	%REC	1	7/22/2013 14:05

1307705-04B Site#4 - 2nd Bay

Work Order: Client: Project:	1307705 Navajo Refining Co Fuel Oil Spill- West					DATES REPORT
Sample ID Clie	nt Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID 71724	Test Name: TP	<u>H DRO/ORO</u>				
1307705-01C Site#	‡1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM		7/23/2013 08:00 AM	7/24/2013 10:04 AM
1307705-02C Site#	‡2 - 2nd Bay		7/16/2013 8:30:00 AM		7/23/2013 08:00 AM	7/24/2013 10:28 AM
1307705-03C Site#	‡3 - 2nd Bay		7/16/2013 8:35:00 AM		7/23/2013 08:00 AM	7/23/2013 02:13 PM
1307705-04C Site#	#4 - 2nd Bay		7/16/2013 8:40:00 AM		7/23/2013 08:00 AM	7/23/2013 06:25 PM
Batch ID R1508	318 <b>Test Name:</b> Vo	latiles - SW820	<u>50C</u>			
1307705-02A Site#	‡2 - 2nd Bay	Solid	7/16/2013 8:30:00 AM			7/22/2013 05:15 PM
Batch ID <u>R1508</u>	<u>373</u> <u>Test Name:</u> Vo	latiles - SW820	<u>50C</u>			
1307705-01A Site#	‡1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM			7/22/2013 01:17 PM
1307705-03A Site#	‡3 - 2nd Bay		7/16/2013 8:35:00 AM			7/22/2013 01:41 PM
1307705-04A Site#	#4 - 2nd Bay		7/16/2013 8:40:00 AM			7/22/2013 02:05 PM
Batch ID R1509	980 <u>Test Name:</u> Ga	soline Range O	rganics - SW8015C			
1307705-01B Site#	‡1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM			7/24/2013 12:35 AM
1307705-02B Site#	‡2 - 2nd Bay		7/16/2013 8:30:00 AM			7/24/2013 12:51 AM
1307705-03B Site#	‡3 - 2nd Bay		7/16/2013 8:35:00 AM			7/24/2013 01:07 AM

7/16/2013 8:40:00 AM

7/24/2013 01:23 AM

Client:	Navajo Refining Company
Work Order:	1307705
Project:	Fuel Oil Spill- West Loading Rack

#### Date: 24-Jul-13

# **QC BATCH REPORT**

Batch ID: 71724 Instrument ID FID-7

Method: SW8015M

MBLK Sample ID: FBLKS1-1	30723-71724				ι	Inits: <b>mg/</b> I	Kg	Analys	is Date: <b>7/</b> 2	23/2013 1	1:22 AM
Client ID:	Run ID:	<b>FID-7</b> _1	130723A		SeqNo: 3296430		6430	Prep Date: 7/23/2013		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7									
Surr: 2-Fluorobiphenyl	2.729	0.10	3.33		0	82	60-135	0			
LCS Sample ID: FLCSS1-1	30723-71724				l	Inits: <b>mg/</b> I	Kg	Analys	is Date: <b>7/</b> 2	23/2013 1	1:46 AM
Client ID:	Run ID:	FID-7_1	130723A		Se	qNo: <b>3296</b>	6431	Prep Date: 7/23	/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	31.3	1.7	33.33		0	93.9	70-130				
Surr: 2-Fluorobiphenyl	2.418	0.10	3.33		0	72.6	60-135	0			
MS Sample ID: 1307728-0	1BMS				U	Jnits: <b>mg/</b> I	Kg	Analys	is Date: <b>7/</b> 2	23/2013 1	2:57 PM
Client ID:	Run ID:	FID-7_1	130723A		Se	qNo: <b>3296</b>	6433	Prep Date: 7/23	/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	36.51	1.7	33.32	3.18	32	100	70-130				
Surr: 2-Fluorobiphenyl	2.605	0.10	3.329		0	78.3	60-135	0			
MSD Sample ID: 1307728-0	1BMSD				ι	Inits: <b>mg/</b> I	Kg	Analys	is Date: <b>7/</b>	23/2013 0	1:20 PM
Client ID:	Run ID:	<b>FID-7</b> _1	130723A		Se	qNo: <b>3296</b>	6434	Prep Date: 7/23	/2013	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	34.65	1.7	33.33	3.18	32	94.4	70-130	36.51	5.23	30	
Surr: 2-Fluorobiphenyl	2.656	0.10	3.33		0	79.8	60-135	2.605	1.93	30	
The following samples were analyz	zed in this batch:	-	807705-01C 807705-04C	130	077	05-02C	13	07705-03C			

# QC BATCH REPORT

Batch ID: R150980 Instrument ID FID-14 Method: SW8015

Batch ID: R150980 Instrumen	t ID FID-14		Metho	d: SW801	5						
MBLK Sample ID: GBLKS-130	723-R150980				ι	Jnits: mg/	Kg	Anal	ysis Date: <b>7/</b>	23/2013 0	7:29 PM
Client ID:	Run	ID: FID-14_	_130723A		SeqNo: 3296984			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050									
Surr: 4-Bromofluorobenzene	0.1038	0.0050	0.1		0	104	70-130		0		
LCS Sample ID: GLCSS-130	723-R150980				ι	Jnits: mg/	Kg	Anal	ysis Date: <b>7/</b>	23/2013 0	7:13 PM
Client ID:	Run	ID: FID-14_	_130723A		Se	eqNo: <b>329</b>	6983	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.152	0.050	1		0	115	70-130				
Surr: 4-Bromofluorobenzene	0.1032	0.0050	0.1		0	103	70-130		0		
MS Sample ID: 1307728-01	BMS				ι	Jnits: mg/	Kg	Anal	ysis Date: <b>7/</b>	23/2013 1	0:10 PM
Client ID:	Run	ID: FID-14_	_130723A		Se	eqNo: <b>329</b>	6993	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9546	0.050	1		0	95.5	70-130				
Surr: 4-Bromofluorobenzene	0.1077	0.0050	0.1		0	108	70-130		0		
MSD Sample ID: 1307728-01	BMSD				ι	Jnits: mg/	Kg	Anal	ysis Date: <b>7/</b>	23/2013 1	0:26 PM
Client ID:	Run	ID: FID-14_	_130723A		Se	eqNo: <b>329</b>	6994	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.003	0.050	1		0	100	70-130	0.954	4.97	30	
Surr: 4-Bromofluorobenzene	0.1076	0.0050	0.1		0	108	70-130	0.10	77 0.0762	30	
The following samples were analyze	ed in this batch		307705-01B 307705-04B	13	077	705-02B	13	07705-03B			

#### **QC BATCH REPORT**

Batch ID: R150818 Instrument ID VOA3 Method: SW8260 MBLK Sample ID: VBLKS1-072213-R150818 Units: µg/Kg Analysis Date: 7/22/2013 10:28 AM Prep Date: Client ID: SeqNo: 3294831 DF: 1 Run ID: VOA3_130722A RPD Ref RPD SPK Ref Control Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual U 5.0 Benzene U 5.0 Ethylbenzene U 5.0 Toluene Xylenes, Total U 10 Surr: 1,2-Dichloroethane-d4 46.03 0 0 0 50 92.1 70-128 Surr: 4-Bromofluorobenzene 48.86 0 50 0 97.7 0 73-126 0 50 0 0 Surr: Dibromofluoromethane 47.95 95.9 71-128 Surr: Toluene-d8 0 49.4 50 0 98.8 73-127 0 LCS Sample ID: VLCSS1-072213-R150818 Units: µg/Kg Analysis Date: 7/22/2013 09:07 AM Clic ID. VOA0 4007004 .... .... 

Client ID:	Run IE	): <b>VOA3_</b>	130722A	:	Seq	No: <b>329</b> 4	1829	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	53.75	5.0	50	C	0	108	79-120				
Ethylbenzene	58.44	5.0	50	C	0	117	80-122				
Toluene	55.14	5.0	50	(	0	110	79-120				
Xylenes, Total	170.9	10	150	C	0	114	80-120				
Surr: 1,2-Dichloroethane-d4	48.61	0	50	(	0	97.2	70-128		0		
Surr: 4-Bromofluorobenzene	50.24	0	50	(	0	100	73-126		0		
Surr: Dibromofluoromethane	48.4	0	50	(	0	96.8	71-128		0		
Surr: Toluene-d8	48.76	0	50	(	0	97.5	73-127		0		

MS	Sample ID: 1307774-07AMS		U	Inits: µg/ŀ	٢g	Analysis Date: 7/22/2013 03:47 P							
Client ID:		Run ID: VOA3_130722A				SeqNo: 3295666					DF: <b>1</b>		
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene		40.7	5.2	51.5		0	79	79-120					
Ethylbenzene		40.19	5.2	51.5		0	78	80-122				S	
Toluene		40.79	5.2	51.5		0	79.2	79-120					
Xylenes, Tota	l	120.9	10	154.5		0	78.3	80-120				S	
Surr: 1,2-D	ichloroethane-d4	48.86	0	51.5		0	94.9	70-128		0			
Surr: 4-Bro	mofluorobenzene	52	0	51.5		0	101	73-126		0			
Surr: Dibro	mofluoromethane	50.59	0	51.5		0	98.2	71-128		0			
Surr: Tolue	ne-d8	51.35	0	51.5		0	99.7	73-127		0			

Batch ID: R150818 Instrument ID VOA3 Method: SW8260 Analysis Date: 7/22/2013 04:16 PM Sample ID: 1307774-07AMSD MSD Units: µg/Kg Prep Date: Client ID: SeqNo: 3295667 DF: 1 Run ID: VOA3_130722A RPD Ref RPD SPK Ref Control Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual 37.02 4.6 0 79.6 40.7 9.48 30 Benzene 46.5 79-120 38.08 4.6 0 Ethylbenzene 46.5 81.9 80-122 40.19 5.4 30 Toluene 37.05 4.6 46.5 0 79.7 79-120 40.79 9.63 30 Xylenes, Total 112.5 9.3 139.5 0 120.9 80.6 79-123 7.24 30 Surr: 1,2-Dichloroethane-d4 44.3 0 46.5 0 48.86 95.3 70-128 9.78 30 Surr: 4-Bromofluorobenzene 47.03 0 46.5 0 101 73-126 52 10 30 0 Surr: Dibromofluoromethane 0 44.82 46.5 96.4 71-128 50.59 12.1 30 0 Surr: Toluene-d8 46.82 46.5 0 101 73-127 51.35 9.23 30

The following samples were analyzed in this batch:

1307705-02A

#### **QC BATCH REPORT**

Batch ID: R150873 Instrument ID VOA5 Method: SW8260 Units: µg/Kg Sample ID: VBLKS1-072213-R150873 Analysis Date: 7/22/2013 10:06 AM MBLK Prep Date: DF: 1 Client ID: Run ID: VOA5_130722A SeqNo: 3295674 SPK Ref RPD Ref RPD Control Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual Benzene U 5.0 Ethylbenzene U 5.0 Toluene U 5.0 Xylenes, Total U 10 Surr: 1,2-Dichloroethane-d4 45.7 0 50 0 91.4 70-128 0 Surr: 4-Bromofluorobenzene 48.17 0 50 0 96.3 73-126 0 0 50 0 0 Surr: Dibromofluoromethane 48.12 96.2 71-128 0 Surr: Toluene-d8 50.16 50 0 100 73-127 0

LCS	Sample ID: VLCSS1-072	213-R150873				U	Inits: µg/ŀ	٢g	Analysis Date: 7/22/2013 09:20 AM			
Client ID:		Run ID: <b>VOA5_130722A</b>							Prep Date: DF			
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		56.29	5.0	50		0	113	79-120				
Ethylbenzene		54.82	5.0	50		0	110	80-122				
Toluene		55.02	5.0	50		0	110	79-120				
Xylenes, Tota	I	165	10	150		0	110	80-120				
Surr: 1,2-D	ichloroethane-d4	50.31	0	50		0	101	70-128		0		
Surr: 4-Bro	mofluorobenzene	50.26	0	50		0	101	73-126		0		
Surr: Dibro	mofluoromethane	49.78	0	50		0	99.6	71-128	1	0		
Surr: Tolue	ne-d8	48.47	0	50		0	96.9	73-127		0		

MS	MS Sample ID: 1307861-01AMS							٢g	Analysis Date: 7/22/2013 12:06 P			
Client ID:		Run ID: VOA5_130722A				SeqNo: 3295679			Prep Date:	DF: <b>1</b>		
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		54.48	5.0	50		0	109	79-120				
Ethylbenzen	e	52.29	5.0	50		0	105	80-122				
Toluene		53.97	5.0	50		0	108	79-120				
Xylenes, Tot	al	159.2	10	150		0	106	80-120				
Surr: 1,2-	Dichloroethane-d4	48.97	0	50		0	97.9	70-128		0		
Surr: 4-Br	romofluorobenzene	49.45	0	50		0	98.9	73-126		0		
Surr: Dibr	romofluoromethane	51.37	0	50		0	103	71-128		0		
Surr: Tolu	iene-d8	49.82	0	50		0	99.6	73-127		0		

Batch ID: R150873 Instrument ID VOA5 Method: SW8260 Analysis Date: 7/22/2013 12:30 PM Sample ID: 1307861-01AMSD MSD Units: µg/Kg Prep Date: Client ID: SeqNo: 3295680 DF: 1 Run ID: VOA5_130722A RPD Ref RPD SPK Ref Control Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual 54.2 5.0 0 108 79-120 0.515 30 Benzene 50 54.48 5.0 50 0 Ethylbenzene 53.47 107 80-122 52.29 2.23 30 Toluene 5.0 0 54.32 50 109 79-120 53.97 0.647 30 Xylenes, Total 160 10 150 0 107 159.2 79-123 0.5 30 Surr: 1,2-Dichloroethane-d4 48.72 0 50 0 97.4 70-128 48.97 0.497 30 Surr: 4-Bromofluorobenzene 50.65 0 50 0 101 73-126 49.45 2.41 30 0 Surr: Dibromofluoromethane 50 0 97.3 48.67 71-128 51.37 5.4 30 0 Surr: Toluene-d8 49.49 50 0 99 73-127 49.82 0.673 30 The following samples were analyzed in this batch: 1307705-01A 1307705-03A 1307705-04A

## **ALS Environmental**

Client: Project: WorkOrder:	Navajo Refining Company Fuel Oil Spill- West Loading Rack 1307705	QUALIFIERS, ACRONYMS, UNITS
Qualifier	Description	
*	Value exceeds Regulatory Limit	
а	Not accredited	
В	Analyte detected in the associated Method Blank above the Repe	orting Limit
Е	Value above quantitation range	
Н	Analyzed outside of Holding Time	
J	Analyte detected below quantitation limit	
Μ	Manually integrated, see raw data for justification	
n	Not offered for accreditation	
ND	Not Detected at the Reporting Limit	
Ο	Sample amount is > 4 times amount spiked	
Р	Dual Column results percent difference > 40%	
R	RPD above laboratory control limit	
S	Spike Recovery outside laboratory control limits	
U	Analyzed but not detected above the MDL	
Acronym	Description	
DCS	Detectability Check Study	
DUP	Method Duplicate	
LCS	Laboratory Control Sample	
LCSD	Laboratory Control Sample Duplicate	
MBLK	Method Blank	
MDL	Method Detection Limit	
MQL	Method Quantitation Limit	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	
PDS	Post Digestion Spike	
PQL	Practical Quantitation Limit	
SD	Serial Dilution	
SDL	Sample Detection Limit	
TRRP	Texas Risk Reduction Program	
Units Reported	Description	
µg/Kg	Micrograms per Kilogram	
mg/Kg		

## ALS Environmental

#### Sample Receipt Checklist

Client Name: NAVAJO REFINING		Date/Time F	Received:	<u>17-Jul-13</u>	<u>08:55</u>	
Work Order: <u>1307705</u>		Received by	<b>y</b> :	<u>PMG</u>		
Checklist completed by Makenzie L. Henderson	17-Jul-13 Date	Reviewed by:	Sonia Ka eSignature	est		Jul-13 Date
Matrices:SolidCarrier name:FedEx						
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Prese	ent		
Custody seals intact on shipping container/cooler?	Yes 🖌	No	Not Prese	ent		
Custody seals intact on sample bottles?	Yes 🗌	No 🗌	Not Prese	ent 🗹		
Chain of custody present?	Yes 🗹	No 🗌				
Chain of custody signed when relinquished and received?	Yes 🗸	No 🗌				
Chain of custody agrees with sample labels?	Yes 🖌	No 🗌				
Samples in proper container/bottle?	Yes 🔽	No 🗌				
Sample containers intact?	Yes 🔽	No 🗌				
Sufficient sample volume for indicated test?	Yes 🗹	No 🗌				
All samples received within holding time?	Yes 🗹	No 🗌				
Container/Temp Blank temperature in compliance?	Yes 🔽	No 🗌				
Temperature(s)/Thermometer(s):	1.9c/1.9c C	:/U	IR1	<u>L</u>		
Cooler(s)/Kit(s):	<u>3334</u>					
Date/Time sample(s) sent to storage:	7/17/13 11:	04				
Water - VOA vials have zero headspace?	Yes	No	No VOA vials	submitted		
Water - pH acceptable upon receipt?	Yes 🔽	No 🗌	N/A			
pH adjusted? pH adjusted by:	Yes 🗌	No 🗹	N/A			

Login Notes:

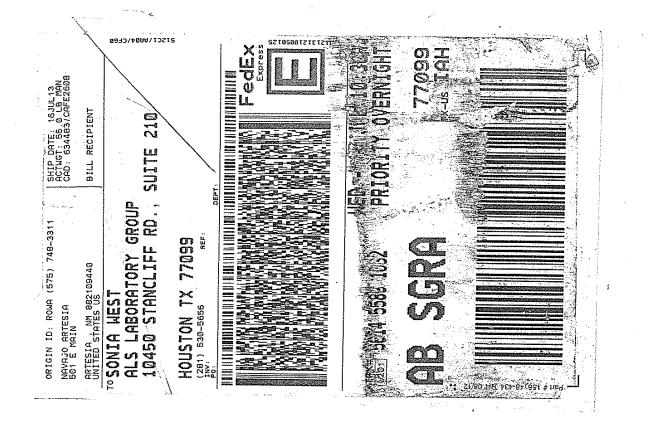
Client Contacted:	Date Contacted	Person Contacted:	
Contacted By:	Regarding:		
Comments:			
CorrectiveAction:			SF

_____

		ALS Laboratory Group		Chai	Chain of Custody Form	ustoc	ly Fo	E				<u> </u>	30	1307705	02		
		Houston, Texas 77099		Page	e 1	o		<b></b>		AN	VAJO	REFII	NING: I	NAVAJO REFINING: Navajo Refining Company	Refinin	g Com	pany
-4	74	(Fax) 281.530.5887						7			۵.	roject	: Artesi	Project: Artesia Tank 815 Spill	815 Sp	III	
No.	N V V																
	,		ALS	ALS Project Manager: Sonia West	ager: Sonl	a West					= .						
	Cus	Customer Information	ā	Project Information	rmation					Param	eter/M	ethod	Reque	Parameter/Method Request for Analysis	nalysis		
	Purchase Order		Project Name Fuel Oil Spill - West Rack Cleanup	Fuel Oil Spi	ll - West R	ack Clean	dni	A Vola	Volatiles								
	Work Order		Project Number					B Serr	Semi-Volatites	es							
	Company Name	Company Name Navajo Refining Company	Bill To Company Navajo Refining Company	Navajo Refi	ning Comp	any		с трн									
	Send Report To	Send Report To Aaron Strange	Invoice Attn. Aaron Strange	Aaron Strar	lge			D DRO									
	Addrose	Address D O Box 150		Address 501 East Main				e oro									
	SCAIDING		8631004	חחר בפצר אומ			L	F GRO									
	City/State/Zip	City/State/Zip Artesia, New Mexico 88211-0159	City/State/Zip Artesia, New Mexico 88210	Artesia, Nev	w Mexico 8	8210		U									
L_	Phone	Phone (575) 748-3311	Phone	Phone (575) 748-3311	311			Ŧ									
	Fax	Fax (575) 746-5451	Fax	Fax (575) 746-5451	151			_									
	e-Mail Address	e-Mail Address A. Strange@hollVfrontier.com	e-Mail Address A. Strange@hollvfrontier.com	A.Strange@	holivirontie	r.com											
ů. Ž		Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	8	U U	1 0	<u> </u>	F G	¥.	1	с С. Тр	Hold
-	Site#1 - 2nd Bay	Bay	7/16/13	8:25	Solid	None	3	×	×	×	×	^ ×	×				
2	Site#2 - 2nd Bay	Bay	7/16/13	8:30	Solid	None	3	×	×	×	^ ×	^ ×	×				
<u> </u>	Site#3 - 2nd Bay	Bay	7/16/13	8:35	Solid	None	e	×	×	×	^ ×	×	×				
4	Site#4 - 2nd Bay	Bay	7/16/13	8:40	Solid	None	3	×	×	×	^ ×	^ ×	×				
5	Temperature Blank	e Blank															
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10	0																
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5	Sanoin II			regeral Express	•	J STD 10 WK Days		🗌 5 Wk Days	Days	∑ ₩	2 Wk Days	🔲 24 Hour	Hour				
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Reli	Relinquished by	Date: 11	Time: Recei	Received by (Laboratory)	ory): '			Ĉ	Cooler Temn	558610	ackage:	(Chech	QC Package: (Check Box Below)	(MO		1. N 4	
										1988	Level I	l: Star	Level II: Standard QC		TR	TRRP-Checklist	dist
ĝ	Logged by (Laboratory):	Date:	Time: Check	Checked by (Laboratory):	<del>ن</del> ې:			-	0-	7004050000	Level I Level I	II: Std V: SW	Level III: Std QC + Raw Data Level IV: SW846 CLP-Like	tw Data -Like	TR.	TRRP Level IV	≥
La La	Preservative Key:	1-HCL 2-HNO3 3-H2SO4 4-NaOH	5-Na2S2O3	6-NaHSO4	7-Other	8-4 degrees C	rees C	9-5035		- 200-94 C	Other:						
Ž	e: Any changes mus	Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group	C Form have been subn	nitted to ALS I	Laboratory	Group.					Copyri	aht 2008	by ALS L	Copyright 2008 by ALS Laboratory Group	Group		1

17 of 18

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CUSTODY SEAL	Seature n By:
7/16/13 Time: 1520	TAAB
pany: Maux jo Refining Co.	

#### Chavez, Carl J, EMNRD

From:	Speer, Julie <jspeer@trcsolutions.com></jspeer@trcsolutions.com>
Sent:	Friday, September 13, 2013 4:43 PM
То:	Chavez, Carl J, EMNRD
Cc:	Gilbert, Bryan; Sahba, Arsin; Robert.Combs@hollyfrontier.com; Holder, Mike
Subject:	Navajo Refining Company Lea Refinery, Lovington - Jan 2011 & Dec 2012 Gas Oil
	Release Investigations
Attachments:	Gas Oil Release Report FINAL to OCD 091313.pdf

Carl,

Attached please find the letter documenting the soil investigations of the January 2011 and December 2012 gas oil releases at Navajo Refining Company's Lea Refinery in Lovington, New Mexico. A hard copy will be delivered next week.

Thank you, Julie Speer, E.I.T. Associate Project Manager



505 East Huntland Drive, Suite 250, Austin, TX 78752 T: 512.684.3148 F: 512.329.8750 C: 512.431.8184

jspeer@trcsolutions.com | www.trcsolutions.com

This email has been scanned by the Symantec Email Security.cloud service. For more information please visit <u>http://www.symanteccloud.com</u>



505 East Huntland Drive Suite 250 Austin, TX 78752

512.329.6080 PHONE 512.329.8750 FAX

www.TRCsolutions.com

September 13, 2013

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505

# Re: January 2011 and December 2012 Gas Oil Release Soil Investigations, Navajo Refining Company, Lea Refinery, Lovington, New Mexico, AP-110

Dear Mr. Chavez:

On behalf of Navajo Refining Company (NRC), TRC Environmental Corporation (TRC) is submitting this letter to document the results of the January 2011 and December 2012 gas oil release investigations conducted at the NRC Lea Refinery (refinery) located near Lovington, Lea County, New Mexico. An initial Release Notification and Corrective Action Form C-141 (Form C-141) for the January 2011 gas oil release was submitted to the New Mexico Oil Conservation Division (OCD) on February 14, 2011. An initial Form C-141 for the December 2012 gas oil release was submitted to the OCD on December 27, 2012. The final Form C-141 for the December 2012 release is provided as Attachment A. The final Form C-141 and disposal records for the January 2011 release will be provided under separate cover.

Both the January 2011 and December 2012 gas oil releases occurred at the Holly Energy Partners (HEP) pump station located at the southwest portion of the refinery. The site plan and HEP pump station location are shown on Figure 1 and the approximate areas affected by the January 2011 and December 2012 releases are shown on Figure 2.

The January 2011 gas oil release occurred on January 29, 2011, when a relief valve at the HEP pump station malfunctioned causing a sump to fill with gas oil. A float that was supposed to trigger a high level alarm for the sump also malfunctioned allowing approximately 37 barrels of gas oil and water to overflow from the sump onto the ground surface. All released gas oil and water were contained within the bermed area of the pump station. Approximately 35 barrels of gas oil free liquid and water were recovered with a vacuum truck and added back to process for reuse. The remainder of the solidified gas oil and any affected gravel and surface soils were excavated in January 2013 and stored in a roll-off bin at the refinery. Excavation was not

conducted until January 2013 due to the presence of aboveground piping that precluded excavation equipment access into the affected area. The roll-off bin will be transported to R360 in Hobbs, New Mexico for disposal.

The December 2012 gas oil release occurred on December 27, 2012, when a pump seal failed at the HEP pump station. Fifty to sixty barrels of gas oil were released to the gravel-covered ground surface. All released gas oil was contained within the bermed area of the pump station. A vacuum truck was used immediately following the release to recover free liquid until the gas oil cooled and solidified. The recovered free liquid was added back to process for reuse. The remainder of the solidified gas oil and any affected gravel and surface soil (108 cubic yards) were excavated immediately following the release and placed in roll-off boxes and transported to R360 in Hobbs, New Mexico for disposal.

Disposal records for the December 2012 gas oil release are provided as Attachment B. Disposal records for the January 2011 release will be provided under separate cover. A photographic log of spill response and investigation activities is provided as Attachment C.

#### SOIL INVESTIGATION ACTIVITIES

Soil investigation activities were conducted by TRC on June 19 and 21, 2013. The objective of the investigation was to determine the vertical extent of potential hydrocarbon impacts associated with the January 2011 and December 2012 gas oil releases. Three soil borings were advanced within the former footprint of the December 2012 gas oil release (BH-1 through BH-3) and one soil boring was advanced with the former footprint of the January 2011 gas oil release (BH-4). The locations of the boring are shown on Figure 2. The soil borings were drilled using air-rotary drilling techniques. Soil samples were continuously collected with a split spoon and described based on lithology, moisture content, and notable presence of potential hydrocarbon impact (i.e. odor and staining). Soil samples were also field screened with a photoionization detector (PID). Soil boring logs are provided as Attachment D.

Two soil samples from each boring were submitted for laboratory analysis. The soil samples submitted for laboratory analysis were collected from the interval with the highest PID readings and an underlying interval (with no suspected hydrocarbon impact) as follows:

- BH-1: Sampled from 6-7 feet bgs and 13-13.5 feet bgs (total boring depth of 13.5 feet bgs).
- BH-2: Sampled from 12-13 feet bgs and 14-14.5 feet bgs (total boring depth of 14.5 feet bgs).
- BH-3: Sampled from 7-8 feet bgs and 14-15 feet bgs (total boring depth of 15 feet bgs).



• BH-4: Sampled from 14-15 feet bgs and 16-16.5 feet bgs (total boring depth of 16.5 feet bgs).

Soil samples were submitted to ALS Environmental in Houston, Texas for laboratory analysis of the following constituents of concern (COCs):

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by method SW8021B;
- Total petroleum hydrocarbons (TPH) by method SW8015; and
- Chloride by method E300.

#### **INVESTIGATION RESULTS**

No hydrocarbon staining was observed in borings BH-1 through BH-4. Minor hydrocarbon odor and PID readings of 0.0 parts per million (ppm) to 0.2 ppm were recorded in borings BH-1, BH-2, and BH-3. In boring BH-4, strong to weak hydrocarbon odors and PID readings of 0.0 ppm to 22.1 ppm were recorded from the ground surface to 14 feet bgs while weak hydrocarbon odors and a PID reading of 101 ppm were recorded from 14 to 15 feet bgs.

Laboratory analytical results from the June 2013 investigation are summarized in Table 1. Laboratory analytical reports are provided as Attachment E.

The June 2013 soil sample analytical results were compared to the OCD Remediation Action Levels (RALs) as determined using the ranking system found in the OCD's *Guidelines for the Remediation of Leaks and Spills* (1993). The gas oil release was assigned a ranking score of "0" based on the following:

- The average depth to groundwater across the refinery is 107.5 feet bgs based on groundwater gauging data collected in August 2013. This is consistent with historical groundwater levels measured at the refinery.
- The release location is located more than 1,000 feet from the nearest water source (e.g., a public water supply well) and more than 200 feet from the nearest private domestic water source (e.g., a private water supply well). Portions of the refinery are located within the wellhead protection areas of City of Lovington public supply wells and water supply wells used on behalf of NRC at the refinery; however, the gas oil release area is not located within a wellhead protection area.
- The release is located more than 1,000 feet from the nearest surface water body.

The OCD RALs for a ranking score of "0" can be found in Table 1. No COCs were detected at concentrations above the OCD RALS in any of the soil samples collected from the four borings in the gas-oil release area, including from boring BH-4.



The June 2013 soil sample analytical results for chloride were compared to the New Mexico Environment Department Soil Screening Levels (SSL) for the chloride leaching to groundwater pathway as there is no established OCD RAL for chloride. The leaching to groundwater pathway SSL was developed in accordance with the NMED's *Risk Assessment Guidance for Site Investigation and Remediation* dated February 2012 and updated June 2012. The SSLs were developed using a dilution attenuation factor (DAF) of 20 based on the following:

- The average depth to groundwater is greater than 100 feet (a DAF of 1 is generally used at sites with shallow groundwater or karst topography).
- The volume of gas oil released (50 to 60 barrels) and the resulting spill area (0.21 acres) were minor (smaller source areas typically result in larger DAFs).
- The absence of elevated chloride concentrations in the samples collected from the gas oil release area borings indicate chloride has been vertically delineated beneath the spill area.

The SSL calculation spreadsheet is provided as Attachment F. Detected chloride concentrations were significantly lower than the calculated SSL for all samples collected from the gas oil release area.

A review of the laboratory quality assurance/quality control (QA/QC) data revealed anomalously high recoveries from matrix spike/matrix spike duplicate (MS/MSD) analyses performed on samples collected from the gas oil release area and analyzed for TPH diesel-range organics (DRO) and TPH oil-range organics (ORO). These high recoveries indicate possible matrix interference and suggest that the detected concentrations of ORO and DRO in the gas oil release samples are biased high.

#### **RECOMMENDATIONS AND CONCLUSIONS**

The June 2013 investigation results indicate that NRC's spill response activities following the January 2011 and December 2012 gas oil releases effectively removed the release material and prevented COCs from migrating into surface soils above RALs. NRC respectfully requests a no further action determination regarding the January 2011 and December 2012 gas oil releases at the refinery based on the following:

- Free liquid gas oil was immediately recovered via vacuum truck and placed back into process for reuse. All solidified gas oil and impacted gravel/soil was recovered via excavation and was transported off-site for disposal.
- According to Material Safety Data Sheets (MSDSs), gas oil is a heavy, highly viscous hydrocarbon with negligible solubility in groundwater. Gas oil is stable and non-reactive at ambient temperatures and has a pour-point of 85° Fahrenheit (i.e., the lowest temperature at which it becomes semi-solid and loses it flow characteristics). According



to the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC), the ambient air temperature December 2012 release ranged from 18 to 38° Fahrenheit, which caused the gas oil to rapidly cool and solidify, therefore inhibiting it from migrating readily into subsurface soil. The material safety data sheet for gas oil is included as Attachment G.

• Laboratory analytical results of soil samples collected from four soil borings installed within the release area indicate no COCs are present at concentrations above the OCD RALs for a ranking score of "0".

Excavated gravel and soil associated with the January 2011 release is contained within a roll-off bin and will be transported to R360 in Hobbs, New Mexico for disposal. Disposal records and a final Form C-141 for the January 2011 release will be provided under separate cover.

If you have any further questions, please do not hesitate to contact Robert Combs of NRC at (575) 746-5382, Bryan Gilbert of TRC at (512) 684-3104, or Julie Speer of TRC at (512) 684-3148.

Sincerely,

Bryan Gilbert, P.G. Project Manager

Sincerely,

Julie Speer, E.I.T. Associate Project Manager

Attachments: Figure 1 - Refinery Vicinity Map Figure 2 - Gas Oil Release Boring Location Map

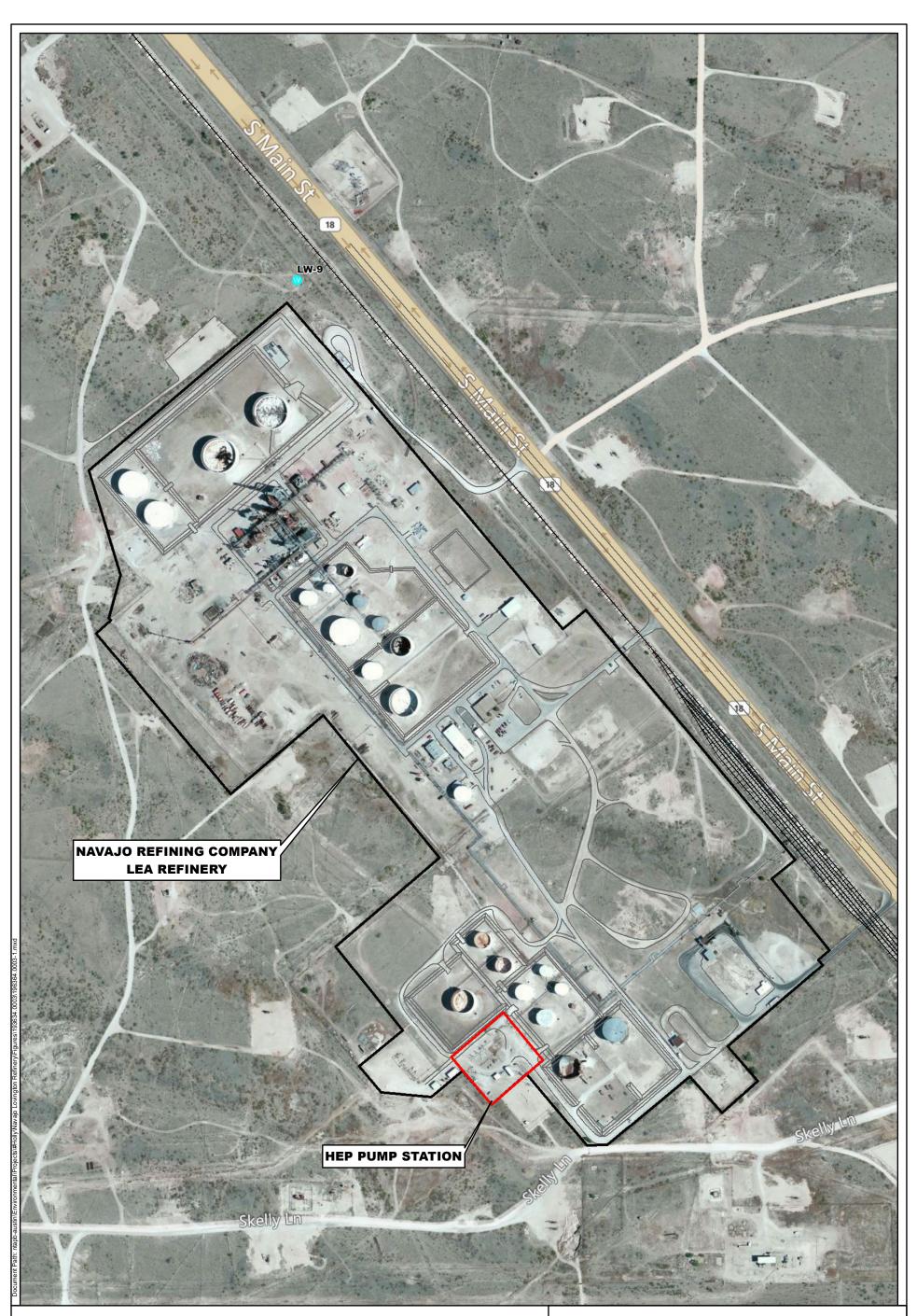
Table 1 - BTEX, TPH, and Chloride Analytical Results in Soil

Attachment A – December 2012 Final Release Notification and Corrective Action Form C-141
Attachment B – December 2012 Release Disposal Records
Attachment C – Photographic log
Attachment D – Soil Boring Logs
Attachment E – ALS Environmental Laboratory Reports
Attachment F – SSL Calculation for Chloride Leaching to Groundwater
Attachment G – Material Safety Data Sheet for Gas Oil

cc: Robert Combs, Navajo Refining Company, Artesia, New Mexico Michael Holder, Navajo Refining Company, Artesia, New Mexico Arsin Sahba, TRC, Austin, Texas



FIGURES



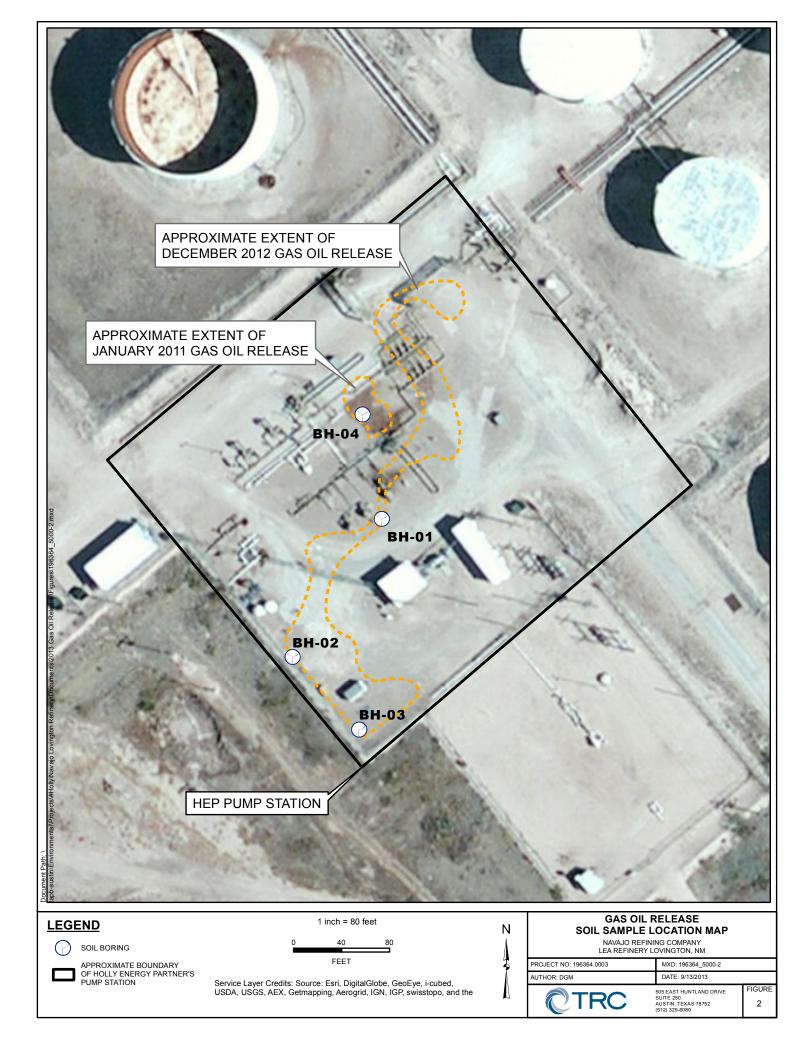
Ν



1 inch = 400 feet +++++++ RAILROAD 200 400 600 800 Λ SITE BOUNDARY FEET APPROXIMATE BOUNDARY OF HOLLY ENERGY PARTNERS PUMP STATION Service Layer Credits: Image courtesy of USGS © 2013 Microsoft Corporation ImagePatch.com © 2010 NAVTEQ © AND WATER WELL

NAVAJO REFINING COMPANY LEA REFINERY LOVINGTON, NM

PROJECT NO: 196364.0003	MXD: 196364.5000-1	
AUTHOR: DGM	DATE: 9/5/2013	
	505 EAST HUNTLAND DRIVE SUITE 250 AUSTIN, TEXAS 78752 (512) 329-6080	FIGURE 1







# TABLE 1. BTEX, TPH, AND CHLORIDE ANALYTICAL RESULTS IN SOILJUNE 2013 GAS OIL RELEASE INVESTIGATIONNAVAJO REFINING COMPANY LEA REFINERY - LOVINGTON, NEW MEXICO

Sample Location	Sample Interval (feet bgs)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Xylenes, Total (mg/kg)	BTEX, Total (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
	OCD RAL	10				50				5,000	867*
BH-1	6-7	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	2,800	75 J	2875	5.96
BH-1	13-13.5	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	210	8.8 J	219	5.4
BH-2	12-13	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	0.85 J	3.6	4.5	4.83 J
BH-2	14-14.5	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	5.7	5.5	11.20	5.29
BH-3	7-8	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	0.56 J	3.9	4.5	5.17
BH-3	14-15	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	<1.7	3.4	3.40	5.15
BH-4	14-15	0.0014	<0.0010	<0.0010	<0.0030	0.0014	<0.050	<1.7	2.7 J	2.7	7.22
BH-4	16-17	0.002	<0.0010	0.0023	<0.0030	0.0043	0.041 J	190	920	1110	8.15

#### Note:

RALs were selected based on a site depth to water of 105 feet bgs; no water source within 1,000 feet; and no private water source within 200

feet, and no surface water within 1,000 feet.

*Chloride concentrations were compared to Soil Screening Level (SSL) developed in accordance with the New Mexico Environment Department's (NMED's) *Risk Assessment* 

mg/kg - milligrams per kilogram

feet bgs - feet below ground surface

BTEX - Benzene, toluene, ethylbenzene, and xylene

TPH - Total petroleum hydrocarbons

GRO - Gasoline range organics (C6 to C12)

DRO - Diesel Range Organics (>C12 to C21)

ORO - Oil Range Organics (>C21 to C35)

NMOCD - New Mexico Oil Conservation Division

RAL - Remediation Action Level based on a ranking score of "0".

J - Analyte detected below quanititation limit

## ATTACHMENT A

December 2012 Final Release Notification and Corrective Action Form C-141

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	Sunta 1 C, 14141 07505							
Release Notification and Corrective Action								
	OPERATOR	Initial Report	Final Report					
Name of Company Navajo Refining Co. LLC	Contact Robert Combs							
Address 7406 South Main St., Lovington, NM	Telephone No. 575-746-53	382						
Facility Name Lea Refinery	Facility Type Petroleum Re	efinery						
Surface Owner	Mineral Owner	API No						

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude 32.87405 Longitude -103.30000

#### NATURE OF RELEASE

Type of Release Gasoil		Volume of Release 50-60 bbl	Volume Re	covered 50-60 bbl
Source of Release Pump seal fail	ure	Date and Hour of Occurrence 12/27/2012 prior to 0250	Date and H 12/27/2012	our of Discovery
Was Immediate Notice Given?		If YES, To Whom?	12/2//2012	, 0230
was miniculate Notice Olven.	🗌 Yes 🗌 No 🔀 Not Required			
By Whom?		Date and Hour		
Was a Watercourse Reached?		If YES, Volume Impacting the Wa	tercourse.	
	🗌 Yes 🖾 No			
If a Watercourse was Impacted, D	escribe Fully.*			
Describe Cause of Problem and R				
	peline ten-inch variable speed pump inn			
discovered the spill, traced it to its	source, and notified the pipeline operate	or, who shut down the pump at appro	oximately 030	) on 12/27/2012.
Describe Area Affected and Clean	up Action Taken.*			
	e bermed containment at the HEP pipelin	ne pump station. A vacuum truck wa	s used to remo	we free liquid until the gas oil
	der of the solidified gas oil and affected s			
	l samples were collected for laboratory a			
	s of concern (COCs) exceed the OCD Re			
	(SSLs). For further details regarding the		please refer to	the December 2012 Gas Oil
Release Soil Investigation letter th	at was submitted to the OCD on Septem	ber 13, 2013.		
I hereby certify that the information	on given above is true and complete to th	e best of my knowledge and underst	and that pursu	ant to NMOCD rules and
regulations all operators are requir	red to report and/or file certain release no	tifications and perform corrective ac	ctions for relea	ses which may endanger
	The acceptance of a C-141 report by the			
	l to adequately investigate and remediate			
	MOCD acceptance of a C-141 report do	es not relieve the operator of respon	sibility for co	npliance with any other
federal, state, or local laws and/or	regulations.			
		OIL CONSERY	VATION I	DIVISION
Whith				
Signature:				
6	A	Approved by Environmental Speciali	st:	
Printed Name: Robert Combs				
Title: Environmental Specialist	A	Approval Date:	Expiration D	ate:
•		• • • · · · · · · · · · · · · · · · · ·	•	
E-mail Address: Robert.Combs@	hollyfrontier.com	Conditions of Approval:		Attached
				Attached
Date:	Phone: 575-746-5382			

* Attach Additional Sheets If Necessary

## ATTACHMENT B

December 2012 Release Disposal Records

			. det
		NON-HAZARDOUS WASTE MANIFES	т 913 <b>34</b>
Part I:	Generato Address City/Stat		() <u>Y (</u> ) Telephone No.
ORGINATI			
Operation	s Center	P	ermit No.
Property N	lame	(Well, Tank Battery, Plant, Facility)	
WASTE ID	DENTIFICATI	ON AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., I	LBS., UNITS, ETC.)
Drilling Flux Completion Contaminate	Fluids	Gas Plant Waste C	xempt Fluids 117 No it No
		DESCRIPTION / NOTES	
CERTIFIC/	1. p. 1. 1. 1. 1.	The waste described above is not hazardous pursuant to 40 CFR Part 261 and w named below. I certify that the foregoing is true and correct to the best of my k	
		the fall the second	to S Ele
	۰. 	Signature of Generator's Authorized Agent	Date and Time of Shipment
Part II:	TRANSP Name Address City/Stat	PORTER: (To be completed in full by Transport	Telephone No.
CERTIFIC	ATION:	I certify that the waste in quantity above was received by me for shipment to the Signature of Transporter's Agent	
		<u>Analitation (1995)</u>	e destination below.
Certific/ Part III:		Signature of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	e destination below.

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	City/Sta		Telephone No.	
ORGINATIC	ON OF WA	ASTE:		
Operations	Center		Permit No.	
Property Na	ame	(Well, Tank Battery, Plant, Facility)		
WASTE IDE	ENTIFICATI	ON AND AMOUNT (BARRELS, YARDS, TONS, C	U.FT., LBS., UNITS, ETC.)	
Drilling Fluid	ls	Tank Bottoms	Exempt Fluids	
Completion F	luids	Gas Plant Waste	C117 No.	
Contaminated	d Soil	Other Materials	Pit No	
,,,,,,,,,,,,,,,,,,,,,,,		DESCRIPTION / NOTES	1	
Seel on a	k dates	t contracted on the Constal	1.2 of the day	
1 1 - E	2 Beck Freide	No. No.		
<u></u>	<u>a di kan kan da da a</u>	Les & a		110
,	<u>.</u>	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be	261 and was consigned to the transporter est of my knowledge.	473 1
,	<u>.</u>	The waste described above is not hazardous pursuant to 40 CFR Part	261 and was consigned to the transporter	nent set
CERTIFICA	TION:	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn	hent
CERTIFICA	TION: TRANSF	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trai	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn	nent
CERTIFICA	TION: TRANSF Name	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trat	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn	nent
CERTIFICA	TION: TRANSF Name Address	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train Completed in full by Train	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter)	nent
CERTIFICA	TION: TRANSF Name	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train Completed in full by Train	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter)	nent
Dertifica Part II:	TION: TRANSF Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train Completed in full by Train	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. 	nent
CERTIFICA PART II: CERTIFICA	TION: TRANSF Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train te	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. 	
Dertifica Part II:	TION: TRANSF Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train Completed in full by Train Lemma 1 certify that the waste in quantity above was received by me for ship	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. 	
Dertifica Part II:	TION: TRANSF Name Address City/Stat	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Train te	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. 	
DERTIFICA	TION: TRANSF Name Address City/Stat	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trate Generator's Authorized Agent I certify that the waste in quantity above was received by me for ship Signature of Transporter's Agent	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. 	
DERTIFICA	TION: TRANSF Name Address City/Sta TION: DISPOS	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trate 	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn nsporter) Telephone No. Truck No. ment to the destination below. Date and Time Receiv	
DERTIFICA	TION: TRANSF Name Address City/Sta TION: DISPOS Name	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trate Generator's Authorized Agent Controlled Recovery, Inc. P.O. Box 388	261 and was consigned to the transporter est of my knowledge. Date and Time of Shipn Date and Time of Shipn Telephone No. Truck No. Truck No. Date and Time Receiv (575) 393-1079	
Dertifica Part II:	TION: TRANSF Name Address City/Stat TION: DISPOS Name Address City/Stat	The waste described above is not hazardous pursuant to 40 CFR Part named below. I certify that the foregoing is true and correct to the be Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trate Generator's Authorized Agent Controlled Recovery, Inc. P.O. Box 388	261 and was consigned to the transporter set of my knowledge. Date and Time of Shipn  Date and Time of Shipn  Telephone No. Truck No. Date and Time Receiv  (575) 393-1079 Telephone No. E-mail	

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	Generator Address City/State		$\frac{(-1)}{(-1)}$ Telephone No.
ORGINATI	ION OF WASTE:		
Operation	s Center		– Permit No.
Property N	Name <u>Lo</u>	(Well, Tank Battery, Plant, Facility)	-
WASTE II	DENTIFICATION AN	ID AMOUNT (BARRELS, YARDS, TONS	S, CU.FT., LBS., UNITS, ETC.)
Drilling Flu Completion Contaminate	Fluids	Tank Bottoms        Gas Plant Waste        Other Materials	- Exempt Fluids C117 No Pit No
	· · · · · · · · · · · · · · · · · · ·	DESCRIPTION / NOTES	
<u></u>	te se the Proge to a	5 1 stress of ted with	Control - 12 yourday
ME JA	and a start and	Servel 1	
CERTIFIC	ATION: The was	te described above is not hazardous pursuant to 40 CFR	Part 261 and was consigned to the transporter
CERTIFIC	named k	te described above is not hazardous pursuant to 40 CFR below. I certify that the foregoing is true and correct to the mature of Generator's Authorized Agent	Part 261 and was consigned to the transporter he best of my knowledge.
	named k	elow. I certify that the foregoing is true and correct to the	he best of my knowledge.
		nature of Generator's Authorized Agent	Transporter)
		nelow. I certify that the foregoing is true and correct to the nature of Generator's Authorized Agent ER: (To be completed in full by T	Transporter) Telephone No.
Part II:	TRANSPORTI Name Address City/State	elow. I certify that the foregoing is true and correct to the nature of Generator's Authorized Agent ER: (To be completed in full by T	Telephone No.
PART II: CERTIFIC/	TRANSPORTI Name Address City/State ATION: I certify	that the waste in quantity above was received by me for	Transporter) Telephone No. Truck No.
Part II: Certific/	TRANSPORTI Name Address City/State ATION: I certify DISPOSAL OF	that the waste in quantity above was received by me for Signature of Transporter's Agent RECLAMATION SITE:	Transporter) Telephone No. Truck No.
Part II: Certific/	TRANSPORTI Name Address City/State ATION: I certify DISPOSAL OF Name Address	that the waste in quantity above was received by me for Signature of Transporter's Agent RECLAMATION SITE: P.O. Box 388	Telephone No.
CERTIFIC	TRANSPORTI Name Address City/State ATION: I certify DISPOSAL OF Name Address City/State	that the waste in quantity above was received by me for Signature of Transporter's Agent RECLAMATION SITE:	Transporter) Telephone No. Truck No.

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	Generator Multion Kethoms - Laceborn Address The Thomas - Laceborn City/State Laceborn M. Market	( ) <u>Constant</u> Telephone No.
ORGINATI	ION OF WASTE:	NA
Operation	s Center	Permit No.
Property N	Name (Well, Tank Battery, Plant, Facility)	
WASTE III	DENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU	J.FT., LBS., UNITS, ETC.)
Drilling Flu Completion Contaminate	Fluids Gas Plant Waste	Exempt Fluids C117 No Pit No
	DESCRIPTION / NOTES	
Seil	and debris can tand in tod wit	h Govert - 12 pasts
1. 1. ja - Ja	Spelar spill.	
4		ator to the second s
		61 and was consigned to the transporter
	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26	61 and was consigned to the transporter
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter)
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Name	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter)
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Name Address	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter)
Certific,	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Name Address City/State	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) Telephone No.
Certific,	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Address City/State ATION: I certify that the waste in quantity above was received by me for shipmed	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) Telephone No.
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Name Address City/State	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) Telephone No.
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Address City/State ATION: I certify that the waste in quantity above was received by me for shipmed	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) S Telephone No.
	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Address City/State ATION: I certify that the waste in quantity above was received by me for shipme Signature of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc.	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) S Telephone No. Truck No. ent to the destination below. Date and Time Received (575) 393-1079
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Address City/State Ation: I certify that the waste in quantity above was received by me for shipme Signature of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Address Controlled Recovery, Inc. P.O. Box 388	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment  Sporter)  Telephone No.  Truck No.  ent to the destination below.  Date and Time Received  (575) 393-1079 Telephone No.
CERTIFIC	ATION: The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best Signature of Generator's Authorized Agent TRANSPORTER: (To be completed in full by Trans Name Address City/State ATION: I certify that the waste in quantity above was received by me for shipme Signature of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc.	61 and was consigned to the transporter of my knowledge. Date and Time of Shipment Sporter) S Telephone No. Truck No. ent to the destination below. Date and Time Received (575) 393-1079

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Part I:	Generator _ Address City/State	Manuar Refiner - Learling	() Telephone No.
ORGINATI	ON OF WAST	re:	NA
Operation	s Center 🛛		Permit No.
Property N	lame	(Well, Tank Battery, Plant, Facility)	
WASTE ID	ENTIFICATION	AND AMOUNT (BARRELS, YARDS, TONS, CU	U.FT., LBS., UNITS, ETC.)
Drilling Flui Completion		Tank Bottoms Gas Plant Waste	Exempt Fluids C117 No
Contaminate	ed Soil	Other Materials	Pit No
		DESCRIPTION / NOTES	
Seitan	1 Delv.	CENTRAL AS STRAS GR	12 yords
	Pipelae	Spill	
	ATION: The	e waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes	261 and was consigned to the transporter st of my knowledge.
CERTIFIC/	ATION: The nam	e waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes Signature of Generator's Authorized Agent	261 and was consigned to the transporter st of my knowledge.
CERTIFIC/	ATION: The nam	e waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes	261 and was consigned to the transporter at of my knowledge. Date and Time of Shipment Isporter)
Certific/ Part II:	ATION: The nam	waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes Signature of Generator's Authorized Agent RTER: (To be completed in full by Tran rtify that the waste in quantity above was received by me for shipn	261 and was consigned to the transporter at of my knowledge. Date and Time of Shipment ISPORTER) Telephone No. Truck No.
	ATION: The nam	waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes Signature of Generator's Authorized Agent RTER: (To be completed in full by Tran rtify that the waste in quantity above was received by me for shipn	261 and was consigned to the transporter at of my knowledge. Date and Time of Shipment <b>Isporter)</b> Telephone No. Truck No. ment to the destination below.
Certific/ Part II: Certific/	ATION: The nam	e waste described above is not hazardous pursuant to 40 CFR Part 2 ned below. I certify that the foregoing is true and correct to the bes Signature of Generator's Authorized Agent RTER: (To be completed in full by Tran rtify that the waste in quantity above was received by me for shipn Signature of Transporter's Agent	261 and was consigned to the transporter at of my knowledge. Date and Time of Shipment <b>Isporter)</b> Telephone No. Truck No. ment to the destination below.

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	Address	pr Alasho Kaliping Langburt Philo Alam e langton W. M. 98760	() - to for the second se
ORGINATIO	N OF WA	STE:	
Operations (	Center		Permit No.
Property Na	me	(Well, Tank Battery, Plant, Facility)	
WASTE IDEN	NTIFICATI	ON AND AMOUNT (BARRELS, YARDS, TONS, CU	J.FT., LBS., UNITS, ETC.)
Drilling Fluids Completion Fluids		Tank Bottoms Gas Plant Waste	Exempt Fluids
Contaminated	1.	Other Materials	Pit No
		DESCRIPTION / NOTES	<u></u>
Seil 1	Detri		23 011 - 12 yours
		Signature of Generator's Authorized Agent	Date and Time of Shipment
Part II:	TRANSP	ORTER: (To be completed in full by Tran	
	Name Address	- S. Brother	S Telephone No.
	City/Stat	e	/ Truck No.
CERTIFICAT	TON:	I certify that the waste in quantity above was received by me for shipn Signature of Transporter's Agent	nent to the destination below.
PART III:	DISPOS	AL OR RECLAMATION SITE:	х
	Name Address	Controlled Recovery, Inc. P.O. Box 388	(575) 393-1079 Telephone No.
	City/Stat	eHobbs, N.M. 88241-0388	www.crihobbs.com E-mail
CERTIFICAT	TION:	I certify that the waste described in Part I was received by me via the t Signature of Facility Agent	
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	Address	or <u>Manhi Katieny - Leat-la</u> nt <u>1966 - Main</u> te Lannington N. U. (22260 -	CTSP244501 Telephone No.
ORGINAT	ION OF W	ASTE:	
Operation	is Center		Permit No.
Property I	Name	(Well, Tank Battery, Plant, Facility)	
WASTE II	DENTIFICAT	ON AND AMOUNT (BARRELS, YARDS, TONS, CU	I.FT., LBS., UNITS, ETC.)
Drilling Flu Completion Contaminat	Fluids	Tank Bottoms       Gas Plant Waste       Other Materials	Exempt Fluids C117 No Pit No
	and Bel	DESCRIPTION / NOTES	- 12 yeards
	. A. A		
He p	Pipeli	ne Spill	
	<u>.</u>	· · · · · · · · · · · · · · · · · · ·	
		The I A American	1 Storting 1224
		Signature of Generator's Authorized Agent	Date and Time of Shipment
PART II:	TRANSF	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	sporter)
PART II:	TRANSF	Signature of Generator's Authorized Agent	sporter)
PART II:	Name Address	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	sporter)
Part II:	Name	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	sporter)
	Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	Sporter) Telephone No. Truck No.
	Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Edgenerator's Authorized Agent I certify that the waste in quantity above was received by me for shipme	Sporter) Telephone No. Truck No. ent to the destination below.
	Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	Sporter) Telephone No. Truck No.
CERTIFIC	Name Address City/Sta ATION:	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Edgenerator's Authorized Agent I certify that the waste in quantity above was received by me for shipme	Sporter) Telephone No. Truck No. ent to the destination below.
Part II: Certific, Part III:	Name Address City/Sta ATION:	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Line Signature of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc.	Sporter) Telephone No. Truck No. Truck No. Date and Time Received (575) 393-1079
CERTIFIC	Name Address City/Sta ATION: DISPOS Name Address	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Editorial Station	sporter) Telephone No. Truck No. Truck No. Date and Time Received (575) 393-1079 Telephone No.
CERTIFIC	Name Address City/Sta ATION: DISPOS Name	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Editorial Station	sporter) Telephone No. Truck No. Truck No. Truck No. Truck No. (575) 393-1079 Telephone No. Www.crihobbs.com
CERTIFIC	Name Address City/Sta ATION: DISPOS Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Ferritory of the second	sporter) Telephone No. Truck No. Truck No. Truck No. Date and Time Received  (575) 393-1079 Telephone No. E-mail  ansporter described in Part II.
Certific. Part III:	Name Address City/Sta ATION: DISPOS Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Lefte I certify that the waste in quantity above was received by me for shipme Signature of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 te Hobbs, N.M. 88241-0388	sporter) Telephone No. Truck No. Truck No. Truck No. Date and Time Received
Certific Part III:	Name Address City/Sta ATION: DISPOS Name Address City/Sta	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans Ferritory of the second	sporter) Telephone No. Truck No. Truck No. Truck No. Date and Time Received  (575) 393-1079 Telephone No. E-mail  ansporter described in Part II.

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Part I:		or <u>Alaren Pafania - La Taba</u> t Auto <u>Alaren (</u> e Latio <u>r () Alaren ()</u>	() Telephone No.
ORGINATIO	ON OF WA	STE:	
Operations	Center		Permit No.
Property Na	ame	(Well, Tank Battery, Plant, Facility)	
WASTE IDE	ENTIFICATI	ON AND AMOUNT (BARRELS, YARDS, TONS, CU	J.FT., LBS., UNITS, ETC.)
Drilling Fluid Completion F Contaminated	luids	Tank Bottoms          Gas Plant Waste          Other Materials	Exempt Fluids C117 No Pit No
		DESCRIPTION / NOTES	
5.3 3 H.C.			
CERTIFICA	TION:	The waste described above is not hazardous pursuant to 40 CFR Part 2 named below. I certify that the foregoing is true and correct to the bes Signature of Generator's Authorized Agent	
Part II:		PORTER: (To be completed in full by Tran	Sporter)
CERTIFICA	-	I certify that the waste in quantity above was received by me for shipm	Truck No.
PART III:	DISPOS	AL OR RECLAMATION SITE:	
	Name Address City/Stat		(575) 393-1079 Telephone No. www.crihobbs.com E-mail
CERTIFICA	TION:	I certify that the waste described in Part I was received by me via the t Signature of Facility Agent	ransporter described in Part II.
TCP - #7520-A			

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Part I:	Address	tor Marthe Kal Mar - Leat 1941 s - Marin (j ate Langton Mul - 69266	( <u>)</u> Telephone No.
ORGINATI	ION OF W	ASTE:	×1×
Operation	s Center		Permit No.
Property N	lame	(Well, Tank Battery, Plant, Facility)	
WASTE II	DENTIFICAT	ION AND AMOUNT (BARRELS, YARDS, TONS, CU.	FT., LBS., UNITS, ETC.)
Drilling Flu	ids	Tank Bottoms	Exempt Fluids
Completion	Fluids	Gas Plant Waste	C117 No
Contaminat	ed Soil	Other Materials	Pit No
· · · · · · · · · · · · · · · · · · ·		DESCRIPTION / NOTES	<u></u>
<u> 61</u> 4	1 4 2 - 37	THIS CONTRINCT ORS OIL - 13	2 ya da
	· · · · ·		9 
<u> </u>	12152	and the stand	
CERTIFIC	ATION:	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of the	
CERTIFIC	ATION:	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of	of my knowledge.
CERTIFIC		The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	of my knowledge. <u>Jacobian Constant</u> Date and Time of Shipment porter)
Certific,		The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	of my knowledge. <u>Jacobian Constant</u> Date and Time of Shipment porter)
	TRANS	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	of my knowledge. <u>Jacobian Constant</u> Date and Time of Shipment porter)
	TRANS Name Address	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	of my knowledge. <u>Date and Time of Shipment</u>
PART II:	TRANS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	of my knowledge. <u>Date and Time of Shipment</u>
	TRANS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	Date and Time of Shipment Date and Time of Shipment Telephone No. Truck No. Truck No.
PART II:	TRANS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	Date and Time of Shipment porter) Telephone No. Truck No.
PART II:	TRANS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans	Date and Time of Shipment Date and Time of Shipment Telephone No. Truck No. Truck No.
PART II: CERTIFIC	TRANS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans the	Date and Time of Shipment Date and Time of Shipment Telephone No. Truck No. Truck No. Date and Time Received (575) 393-1079
PART II: CERTIFIC	TRANS Name Address City/Sta ATION: DISPOS	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authofized Agent PORTER: (To be completed in full by Trans the	Date and Time of Shipment Date and Time of Shipment Telephone No. Truck No. Truck No. Date and Time Received
PART II: CERTIFIC	TRANSI Name Address City/Sta ATION: DISPOS Name	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans the	Date and Time of Shipment Date and Time of Shipment  porter) Telephone No. Truck No. Truck No. Date and Time Received  (575) 393-1079 Telephone No. Www.crihobbs.com
Part II: Certific, Part III:	TRANSI Name Address City/Sta ATION: DISPOS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans PORTER: (To be completed in full by Trans I certify that the waste in quantity above was received by me for shipment Signature of Transporter's Agent SAL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Ate Hobbs, N.M. 88241-0388	Date and Time of Shipment Date and Time of Shipment  porter) Telephone No. Truck No. Truck No. Date and Time Received  (575) 393-1079 Telephone No. Www.crihobbs.com E-mail
PART II: CERTIFIC	TRANSI Name Address City/Sta ATION: DISPOS Name Address City/Sta	The waste described above is not hazardous pursuant to 40 CFR Part 26 named below. I certify that the foregoing is true and correct to the best of Signature of Generator's Authorized Agent PORTER: (To be completed in full by Trans the	Date and Time of Shipment Date and Time of Shipment  porter) Telephone No. Truck No. Truck No. Date and Time Received  (575) 393-1079 Telephone No. Www.crihobbs.com E-mail

## ATTACHMENT C

Photographic Log



Photo 1: Navajo Refining Company (NRC) staff removes liquid gas oil using a vacuum truck from the Holly Energy Partners (HEP) pump station (i.e., release location) on December 27, 2012.



Photo 2: Solidified gas oil on ground surface south of release location (December 27, 2012).



Photo 3: Gas oil retained within diked containment southeast of release (December 27, 2012).



Photo 4: Drilling soil boring BH-4 (June 19, 2013).

## ATTACHMENT D

Soil Boring Logs

C ا	R	С		B	ORII	NG LC	)G	BH-1	
Client: Site: Le				lavajo	o Refining	Company		<u> </u>	TRC Project #: 196364 Start Date: 6/19/2013
	ddress: 7406 South Main St, Lovington, New Mexico roject: Gas Oil Release Soil Investigation							Finish Date: 6/19/2013	
-									Permit #: NA
Drilling Drilling					ng	Drilling	Crew:Gabe P	erez and crew	TRC Site Rep.:Josh Ward TRC Reviewer: Bryan Gilbert
Boring [				•		Boring	Depth (ft bgs)	. 13 5	X-Y Coord. Sys.NA
			,		inch Split			. 15.5	X-Coord: NA
Blow Co	-					•	vdrated 3/8-inc	h Bentonite Chips	Y-Coord: NA
					/olatile O	rganic Com	•		Elevation Datum: NM
Meter:		-				Units:			Ground Elevation (ft):NM
			Same						
(ft)			Samp		D				
atior	н (ft	/al	ver	/tice	anin	(gol			
Elevation (ft)	Depth (ft)	nten	Recovery	naly	Field Screening	Lithology		1 tal 1 -	orio Deservition
ш	_	<u> </u>	Ŕ	A	шv			Lithold	ogic Description
							GM: Silty Grave	l, gray and brown, weak	hydrocarbon odor, dry.
-	-						Caliaha, liahtair		
							cemented with c		lor, dry, well cemented, becomes weakly
					0.0				
F	-								
					0.0				
5	-5				0.0		Caliche: some fi hydrocarbon od	ne-grained poorly-grade or, dry, well to weakly ce	d medium dense sand, light pink, moderate mented.
_	_				0.0			fine sand, poorly graded kly cemented.	, some silt, light gray, moderate hydrocarbon
-	-						No recovery		
-	-						SM: Silty Sand.	fine sand, poorly graded	, some silt, light gray, moderate hydrocarbon
10	- 10				0.0		odor, moist, wea		, , , , , , , , , ,
-	-						No recovery		
Γ					0.0	T T T T	Caliche: light gra	ay, moderate hydrocarbo	on odor, dry, moderate cementation.
F	-								
					0.0	F		HOULD NOT BE USED	SEPARATELY FROM THE ORIGINAL
							REPORT		
15	- 15								
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F	+								
+	+								
	20								

T)	R	С		B	ORII	NG LC	)G	BH-2				
Client:	Holly I	Front	ier, N	lavaj	o Refining	Company			TRC Project #: 196364			
Site: Le	ea Ref	finery	,						Start Date: 6/20/2013			
Address	s: 740	)6 So	uth N	/lain \$	St, Loving	ton, New M	exico		Finish Date: 6/20/2013			
Project:	Gas	Oil R	eleas	se So	il Investig	ation			Permit #: NA			
Drilling (	Comp	anv:	Talon	Drill	ina	Drilling	g Crew:Gabe P	erez and crew	TRC Site Rep.: Josh Ward			
Drilling I					5		,		TRC Reviewer: Bryan Gilbert			
Boring [	Diame	ter (i	n): 6 ⁻	1/4		Boring	Depth (ft bgs):	14.5	X-Y Coord. Sys.:NA			
			,		-inch Split	-			X-Coord: NA			
Blow Co	-					•	vdrated 3/8-inc	h Bentonite Chips	Y-Coord: NA			
Field Sc	reenii	ng Pa	arame	eter:	Volatile O	rganic Com	•		Elevation Datum: NM			
Aeter:		-				Units:			Ground Elevation (ft):NM			
			Samp									
n (f	ft)				bu	>						
atic	th (1	val	оле	ytic	a eni	olog						
Elevation (ft)	Depth (ft)	Interval	Recovery	Analytical	Field Screening	Lithology		Lithold	ogic Description			
_		-	ĽĽ.	ব	ш 0)			LITIOIC	Jgic Description			
-0				5	0.0		SM: Silty Sand, f orange brown, w	ine sand, poorly graded eak hydrocarbon odor,	l, few angular gravel up to 3/4", some silt, moist.			
	-				0.0		Caliche: light gra depth, dry, well c		on odor, hydrocarbon odor becomes weak with			
					0.2							
	-			8								
	_			2	0.1							
					0.1							
5	-5						Caliche: light gra	v moderate to weak hy	drocarbon odor, dry, well cemented.			
	_				0.0	T T T	Interbedded with		ed, loose, light orange, moderate to weak			
					0.1		nydrocarbon odd	r, dry, no cementation.				
-	-			8	0.0		SM: Silty Sand, f silt, tan, weak hy	ine sand, poorly graded drocarbon odor, dry to r	I, few angular caliche gravel up to 3/4", some moist, well to poorly cemented.			
	-			8			Caliche: light gra	y, no hydrocarbon odor	, dry, well to moderately cemented.			
	-			8	0.0				I, few angular caliche gravel up to 3/4", some moist, well to poorly cemented.			
10	- 10				0.2	······································		•				
					0.1		poorly graded, lo	ose, tan, no hydrocarbo	r, dry, well cemented. Interbedded with fine sand on odor, dry, no cementation.			
							1					
	-				0.0			ine sand, poorly sorted, erate cementation.	little silt, dense, light gray, no hydrocarbon			
					0.0		,					
					0.0							
15	- 15				0.0		THESE LOGS S REPORT	HOULD NOT BE USED	) SEPARATELY FROM THE ORIGINAL			
	+											
_												
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-	-											
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20	L ₂₀											

		C				NG LC		BH-3	
Client:	Holly F	Front	tier, N	lavaj	o Refining	Company			TRC Project #: 196364
Site: Le	ite: Lea Refinery								Start Date: 6/20/2013
ddress	s: 7406 South Main St, Lovington, New Mexico						Finish Date: 6/20/2013		
Project:	oject: Gas Oil Release Soil Investigation							Permit #: NA	
Orilling (					ing	Drilling	g Crew:Gabe P	erez and crew	TRC Site Rep.:Josh Ward
Drilling I									TRC Reviewer: Bryan Gilbert
Boring [			-				g Depth (ft bgs):	15	X-Y Coord. Sys.:NA
•	-				-inch Split	•			X-Coord: NA
Blow Co							•	n Bentonite Chips	Y-Coord: NA
		-			Volatile O	rganic Com	•		Elevation Datum: NM
/leter:	MiniR	AE 2	000 F	PID		Units:	ppm		Ground Elevation (ft):NM
(#)	_		Samp		D				
Elevation (ft)	Depth (ft)	a	Recovery	Analytical	Field Screening	Lithology			
eva	əpth	Interval	) 006	ylar	eld sree	thold			
Ш	ă	Ē	Å	Ā	щŇ	Ë		Litholog	ic Description
-0	⁻⁰						GM: Silty Gravel	some silt, gray and brow	n, strong hydrocarbon odor, dry.
	-				0.0		-		
					0.0		•		
							Caliche: light gra	y, moderate hydrocarbon	odor, moist, becomes dry with depth, well
	-				0.0		cemented. Thinly	laminated from 2'-3'.	
					0.0	T T			
			******				-		
5	-5				0.0				
					0.0				
-									
-	-				0.0				
					0.0		SP: Sand, fine sa moderate cemen		e, tan, weak to no hydrocarbon odor, moist,
							•		
					0.0	<b></b>	•		
10	10				0.0		Caliche: pink, we	ak hydrocarbon odor, dry	, well cemented.
10	- 10							and, poorly graded, dense	e, tan, no hydrocarbon odor, moist, moderate
	-				0.0		cementation.		
					0.0		•		
							•		
	-				0.0				
					0.0		•		
					0.0		•		
15	- 15				0.0	•••••••••			
							REPORT	NOT NOT RE USED S	EPARATELY FROM THE ORIGINAL
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	1								

©TRC BORI	NG LO	G	BH-4	
Client: Holly Frontier, Navajo Refining Company Site: Lea Refinery Address: 7406 South Main St, Lovington, New Mexico Project: Gas Oil Release Soil Investigation Drilling Company:Talon Drilling Drilling Crew:Gabe Perez and crew Drilling Method: Air Rotary Boring Diameter (in): 6 1/4 Boring Depth (ft bgs): 17 Sampling Method: 2-foot x 2-inch Split Spoon Blow Count Method:NA Grout:Hydrated 3/8-inch Bentonite Chips Field Screening Parameter: Volatile Organic Compounds			TRC Project #: 196364 Start Date: 6/19/2013 Finish Date: 6/19/2013 Permit #: NA TRC Site Rep.:Josh Ward TRC Reviewer: Bryan Gilbert X-Y Coord. Sys.:NA X-Coord: NA Y-Coord: NA Elevation Datum: NM	
Elevation (ft) Depth (ft) (ft) Interval ald Recovery Analytical Analytical Screening	Units:	ppm	Litholo	Ground Elevation (ft):NM
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		Lithologic Description         ML: Sandy Silt with Gravel, few gravel up to 1*, little fine sand, brown and orange, strong hydrocarbon odor, moist, low toughness, low plasticity, firm.         Caliche: light tan, strong to moderate hydrocarbon odor, moist, well to moderately cemented.         SM: Silty Sand with Gravel, fine sand, poorly graded, few rounded quartz gravel up to 1.5*, little silt, medium dense, tan, weak hydrocarbon odor, moist, weakly to moderately cemented.         Sandstone: fine sand, poorly graded, hard, tan, no hydrocarbon odor, moist, moderately to well cemented.         SP: Sand with Silt, fine sand, poorly graded, few rounded quartz gravel up to 3/4* from 15-17', few silt, dense, tan but orange from 15-16', weak hydrocarbon odor with no hydrocarbon odor from 9-11' and 12'-15', moist, moderately to well cemented.         THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL		
20 - 20		REPORT		

### ATTACHMENT E

ALS Environmental Laboratory Reports



09-Jul-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

Tel: (575) 746-5382 Fax: (575) 746-5421

Re: Gas-Oil Release Investigation

Work Order: 1306935

Dear Robert,

ALS Environmental received 9 samples on 22-Jun-2013 09:45 AM for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is G .

Regards,

Sonia West Electronically approved by: Sonia West

Sonia West Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887 ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client:	Navajo Refining Company
Project:	Gas-Oil Release Investigation
Work Order:	1306935

# Work Order Sample Summary

Lab Samp ID	<u>Client Sample ID</u>	Matrix	Tag Number	<b>Collection Date</b>	Date Received	Hold
1306935-01	BH-1 13-13.5	Soil		6/19/2013 20:30	6/22/2013 09:45	
1306935-02	BH-1 6-7	Soil		6/19/2013 21:10	6/22/2013 09:45	
1306935-03	BH-3 7-8	Soil		6/19/2013 22:25	6/22/2013 09:45	
1306935-04	BH-3 14-15	Soil		6/19/2013 22:30	6/22/2013 09:45	
1306935-05	BH-2 12-13	Soil		6/20/2013 10:30	6/22/2013 09:45	
1306935-06	BH-2 14-14.5	Soil		6/20/2013 10:40	6/22/2013 09:45	
1306935-07	BH-4 14-15	Soil		6/20/2013 13:40	6/22/2013 09:45	
1306935-08	BH-4 16-17	Soil		6/20/2013 13:50	6/22/2013 09:45	
1306935-09	TB-06-21-13-01	Water		6/19/2013	6/22/2013 09:45	

Client:	Navajo Refining Company	
Project:	Gas-Oil Release Investigation	<b>Case Narrative</b>
Work Order:	1306935	

As per your request, this report has been revised to change the project name.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-1 6-7: The surrogate was diluted out in the 100 x dilution.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-4 16-17: The surrogate was diluted out in the 20 x dilution.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-1 13-13.5: The MS/MSD recoveries were outside of the control limits for TPH DRO and TPH ORO due to matrix interference.

Batch R149461, BTEX 8021B, Sample 1306884-01A: MS/MSD are for an unrelated sample.

Batch 71202, Chloride 300.0, Sample BH-4 16-17: MS/MSD recoveriesy were outside of the control limits due to possible matrix interference.

Sample ID:

# Client: Navajo Refining Company

Project: Gas-Oil Release Investigation

BH-1 13-13.5

Collection Date: 6/19/2013 08:30 PM

#### Work Order: 1306935 Lab ID: 1306935-01 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed		
TPH DRO/ORO - 8015C			SW8015	M	Prep Date: 6/26/2013	Analyst: RPM		
TPH (Diesel Range)	210		8.5	5 mg/Kg	5	6/27/2013 10:37 AM		
TPH (Motor Oil Range)	8.8	J	17	7 mg/Kg	5	6/27/2013 10:37 AM		
Surr: 2-Fluorobiphenyl	73.6		60-13	5 %REC	5	6/27/2013 10:37 AM		
GASOLINE RANGE ORGANICS - SV	V8015C		SW8015	;		Analyst: <b>KKP</b>		
Gasoline Range Organics	U		0.050	) mg/Kg	1	6/25/2013 03:44 PM		
Surr: 4-Bromofluorobenzene	111		70-130	%REC	1	6/25/2013 03:44 PM		
втех			SW8021	в		Analyst: <b>KKP</b>		
Benzene	U		1.0	) µg/Kg	1	6/25/2013 01:46 PM		
Toluene	U		1.0	) µg/Kg	1	6/25/2013 01:46 PM		
Ethylbenzene	U		1.(	) µg/Kg	1	6/25/2013 01:46 PM		
Xylenes, Total	U		3.0	) µg/Kg	1	6/25/2013 01:46 PM		
Surr: 4-Bromofluorobenzene	118		75-13	1 %REC	1	6/25/2013 01:46 PM		
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 01:46 PM		
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2013	Analyst: JKP		
Chloride	5.40		4.99	) mg/Kg	1	7/1/2013 04:14 AM		
Surr: Selenate (surr)	107		85-11	5 %REC	1	7/1/2013 04:14 AM		

Client:Navajo Refining CompanyProject:Gas-Oil Release InvestigationSample ID:BH-1 6-7

Collection Date: 6/19/2013 09:10 PM

### Work Order: 1306935 Lab ID: 1306935-02 Matrix: SOIL

<b>Concetion Date:</b> 0/19/2015 09:10 1 M				Mailly, SOIL					
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed			
TPH DRO/ORO - 8015C			SW8015	M	Prep Date: 6/26/201	3 Analyst: RPM			
TPH (Diesel Range)	2,800		17	0 mg/Kg	100	6/27/2013 10:37 AM			
TPH (Motor Oil Range)	75	J	34	0 mg/Kg	100	6/27/2013 10:37 AM			
Surr: 2-Fluorobiphenyl	0	S	60-13	5 %REC	100	6/27/2013 10:37 AM			
GASOLINE RANGE ORGANICS - SV	V8015C		SW8015	5		Analyst: KKP			
Gasoline Range Organics	U		0.05	) mg/Kg	1	6/25/2013 01:52 PM			
Surr: 4-Bromofluorobenzene	129		70-13	0 %REC	1	6/25/2013 01:52 PM			
BTEX			SW8021	В		Analyst: KKP			
Benzene	U		1.0	) µg/Kg	1	6/25/2013 02:07 PM			
Toluene	U		1.0	) µg/Kg	1	6/25/2013 02:07 PM			
Ethylbenzene	U		1.0	) µg/Kg	1	6/25/2013 02:07 PM			
Xylenes, Total	U		3.	) µg/Kg	1	6/25/2013 02:07 PM			
Surr: 4-Bromofluorobenzene	112		75-13	1 %REC	1	6/25/2013 02:07 PM			
Surr: Trifluorotoluene	102		73-13	0 %REC	1	6/25/2013 02:07 PM			
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/201	3 Analyst: JKP			
Chloride	5.96		4.9	9 mg/Kg	1	7/1/2013 04:29 AM			
Surr: Selenate (surr)	112		85-11	5 %REC	1	7/1/2013 04:29 AM			

Sample ID:

Client:Navajo Refining CompanyProject:Gas-Oil Release Investigation

BH-3 7-8

Collection Date: 6/19/2013 10:25 PM

Work Order: 1306935 Lab ID: 1306935-03 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C			SW8015	м	Prep Date: 6/26/2	013 Analyst: RPM
TPH (Diesel Range)	0.56	J	1.7	mg/Kg	1	6/26/2013 03:24 PM
TPH (Motor Oil Range)	3.9		3.4	mg/Kg	1	6/26/2013 03:24 PM
Surr: 2-Fluorobiphenyl	66.5		60-135	%REC	1	6/26/2013 03:24 PM
GASOLINE RANGE ORGANICS - SW	/8015C		SW8015			Analyst: KKP
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 02:08 PM
Surr: 4-Bromofluorobenzene	124		70-130	%REC	1	6/25/2013 02:08 PM
втех			SW8021	В		Analyst: KKP
Benzene	U		1.0	µg/Kg	1	6/25/2013 02:27 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 02:27 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 02:27 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 02:27 PM
Surr: 4-Bromofluorobenzene	119		75-131	%REC	1	6/25/2013 02:27 PM
Surr: Trifluorotoluene	105		73-130	%REC	1	6/25/2013 02:27 PM
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2	013 Analyst: JKP
Chloride	5.17		5.00	mg/Kg	1	7/1/2013 04:43 AM
Surr: Selenate (surr)	114		85-115	%REC	1	7/1/2013 04:43 AM

Sample ID:

# Client: Navajo Refining Company

Project: Gas-Oil Release Investigation

BH-3 14-15

Collection Date: 6/19/2013 10:30 PM

#### Work Order: 1306935 Lab ID: 1306935-04 Matrix: SOIL

Conection Date: 0/19/2015 10.50 F		Wathx: SOIL					
Analyses	Result	Report Qual Limit I	Units	Dilution Factor	Date Analyzed		
TPH DRO/ORO - 8015C		SW8015N	Λ	Prep Date: 6/26/201	3 Analyst: RPM		
TPH (Diesel Range)	U	1.7	mg/Kg	1	6/26/2013 03:47 PM		
TPH (Motor Oil Range)	3.4	3.4	mg/Kg	1	6/26/2013 03:47 PM		
Surr: 2-Fluorobiphenyl	64.8	60-135	%REC	1	6/26/2013 03:47 PM		
GASOLINE RANGE ORGANICS - SI	N8015C	SW8015			Analyst: KKP		
Gasoline Range Organics	U	0.050	mg/Kg	1	6/25/2013 03:12 PM		
Surr: 4-Bromofluorobenzene	111	70-130	%REC	1	6/25/2013 03:12 PM		
втех		SW8021E	3		Analyst: KKP		
Benzene	U	1.0	µg/Kg	1	6/25/2013 02:47 PM		
Toluene	U	1.0	µg/Kg	1	6/25/2013 02:47 PM		
Ethylbenzene	U	1.0	µg/Kg	1	6/25/2013 02:47 PM		
Xylenes, Total	U	3.0	µg/Kg	1	6/25/2013 02:47 PM		
Surr: 4-Bromofluorobenzene	119	75-131	%REC	1	6/25/2013 02:47 PM		
Surr: Trifluorotoluene	107	73-130	%REC	1	6/25/2013 02:47 PM		
ANIONS - EPA 300.0 (1993)		E300		Prep Date: 6/29/201	3 Analyst: JKP		
Chloride	5.15	5.00	mg/Kg	1	7/1/2013 04:58 AM		
Surr: Selenate (surr)	111	85-115	%REC	1	7/1/2013 04:58 AM		

Sample ID:

#### **Client:** Navajo Refining Company **Project:** Gas-Oil Release Investigation

BH-2 12-13

Collection Date: 6/20/2013 10:30 AM

#### Work Order: 1306935 Lab ID: 1306935-05 Matrix: SOIL

Conection Date. 0/20/2015 10.50 A		Maula, SOIL					
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed	
TPH DRO/ORO - 8015C			SW8015	М	Prep Date: 6/26/20	13 Analyst: RPM	
TPH (Diesel Range)	0.85	J	1.7	7 mg/Kg	1	6/26/2013 04:11 PM	
TPH (Motor Oil Range)	3.6		3.4	l mg/Kg	1	6/26/2013 04:11 PM	
Surr: 2-Fluorobiphenyl	75.1		60-135	5 %REC	1	6/26/2013 04:11 PM	
GASOLINE RANGE ORGANICS - SW	/8015C		SW8015	i		Analyst: KKP	
Gasoline Range Organics	U		0.050	) mg/Kg	1	6/25/2013 03:28 PM	
Surr: 4-Bromofluorobenzene	115		70-130	%REC	1	6/25/2013 03:28 PM	
втех			SW8021	в		Analyst: KKP	
Benzene	U		1.0	) µg/Kg	1	6/25/2013 05:07 PM	
Toluene	U		1.0	) µg/Kg	1	6/25/2013 05:07 PM	
Ethylbenzene	U		1.0	) µg/Kg	1	6/25/2013 05:07 PM	
Xylenes, Total	U		3.0	) µg/Kg	1	6/25/2013 05:07 PM	
Surr: 4-Bromofluorobenzene	118		75-131	1 %REC	1	6/25/2013 05:07 PM	
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 05:07 PM	
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/20	13 Analyst: JKP	
Chloride	4.83	J	5.00	) mg/Kg	1	7/1/2013 05:12 AM	
Surr: Selenate (surr)	108		85-115	5 %REC	1	7/1/2013 05:12 AM	

### Client: Navajo Refining Company

#### Project: Gas-Oil Release Investigation

Sample ID: BH-2 14-14.5

Collection Date: 6/20/2013 10:40 AM

#### Work Order: 1306935 Lab ID: 1306935-06 Matrix: SOIL

<b>Conection Date:</b> 0/20/2015 10.40 P	Matrix. SOIL					
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C			SW8015	м	Prep Date: 6/26/2013	Analyst: RPM
TPH (Diesel Range)	5.7		1.7	mg/Kg	1	6/26/2013 04:35 PM
TPH (Motor Oil Range)	5.5		3.4	mg/Kg	1	6/26/2013 04:35 PM
Surr: 2-Fluorobiphenyl	60.2		60-135	%REC	1	6/26/2013 04:35 PM
GASOLINE RANGE ORGANICS - S	W8015C		SW8015			Analyst: KKP
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 04:32 PM
Surr: 4-Bromofluorobenzene	112		70-130	%REC	1	6/25/2013 04:32 PM
втех			SW8021	В		Analyst: KKP
Benzene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 05:28 PM
Surr: 4-Bromofluorobenzene	119		75-131	%REC	1	6/25/2013 05:28 PM
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 05:28 PM
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2013	Analyst: JKP
Chloride	5.29		5.00	mg/Kg	1	7/1/2013 05:27 AM
Surr: Selenate (surr)	113		85-115	%REC	1	7/1/2013 05:27 AM

#### **Client:** Navajo Refining Company

**Project:** Gas-Oil Release Investigation

Sample ID: BH-4 14-15

Collection Date: 6/20/2013 01:40 PM

#### Work Order: 1306935 Lab ID: 1306935-07 Matrix: SOIL

Conection Date: 0/20/2013 01.40 F	Wiatrix: SOIL					
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C			SW8015I	М	Prep Date: 6/26/2013	Analyst: RPM
TPH (Diesel Range)	U		1.7	mg/Kg	1	6/26/2013 04:58 PM
TPH (Motor Oil Range)	2.7	J	3.4	mg/Kg	1	6/26/2013 04:58 PM
Surr: 2-Fluorobiphenyl	72.3		60-135	%REC	1	6/26/2013 04:58 PM
GASOLINE RANGE ORGANICS - SV	V8015C		SW8015			Analyst: KKP
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 04:49 PM
Surr: 4-Bromofluorobenzene	111		70-130	%REC	1	6/25/2013 04:49 PM
втех			SW80211	В		Analyst: KKP
Benzene	1.4		1.0	µg/Kg	1	6/25/2013 05:48 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 05:48 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 05:48 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 05:48 PM
Surr: 4-Bromofluorobenzene	122		75-131	%REC	1	6/25/2013 05:48 PM
Surr: Trifluorotoluene	106		73-130	%REC	1	6/25/2013 05:48 PM
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2013	Analyst: JKP
Chloride	7.22		5.00	mg/Kg	1	7/1/2013 05:42 AM
Surr: Selenate (surr)	105		85-115	%REC	1	7/1/2013 05:42 AM

# Client:Navajo Refining CompanyProject:Gas-Oil Release Investigation

Sample ID: BH-4 16-17

**Collection Date:** 6/20/2013 01:50 PM

### Work Order: 1306935 Lab ID: 1306935-08 Matrix: SOIL

<b>Concetion Date:</b> 0/20/2015 01:50 110				Matrix. Soll					
Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed			
TPH DRO/ORO - 8015C			SW8015	М	Prep Date: 6/26/2013	Analyst: RPM			
TPH (Diesel Range)	190		34	l mg/Kg	20	6/27/2013 10:13 AM			
TPH (Motor Oil Range)	920		68	3 mg/Kg	20	6/27/2013 10:13 AM			
Surr: 2-Fluorobiphenyl	0	S	60-13	5 %REC	20	6/27/2013 10:13 AM			
GASOLINE RANGE ORGANICS - SV	V8015C		SW8015	i		Analyst: KKP			
Gasoline Range Organics	0.041	J	0.050	) mg/Kg	1	6/25/2013 05:05 PM			
Surr: 4-Bromofluorobenzene	109		70-130	%REC	1	6/25/2013 05:05 PM			
втех			SW8021	в		Analyst: KKP			
Benzene	2.0		1.0	) µg/Kg	1	6/25/2013 06:08 PM			
Toluene	2.3		1.0	) µg/Kg	1	6/25/2013 06:08 PM			
Ethylbenzene	U		1.0	) µg/Kg	1	6/25/2013 06:08 PM			
Xylenes, Total	U		3.0	) µg/Kg	1	6/25/2013 06:08 PM			
Surr: 4-Bromofluorobenzene	115		75-13	1 %REC	1	6/25/2013 06:08 PM			
Surr: Trifluorotoluene	101		73-130	) %REC	1	6/25/2013 06:08 PM			
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2013	Analyst: JKP			
Chloride	8.15		5.00	) mg/Kg	1	7/1/2013 05:56 AM			
Surr: Selenate (surr)	115		85-11	5 %REC	1	7/1/2013 05:56 AM			

Analyses	Result	Qual	Report	Dilution		Date Analyzed
<b>Collection Date:</b>	6/19/2013			Matrix	: WATER	
Sample ID:	TB-06-21-13-01			Lab ID	: 1306935-09	
Project:	Gas-Oil Release Investigation			Work Order	<b>:</b> 1306935	
Client:	Navajo Refining Company					

Analyses	Result	Qual Limit	Units	Factor	Date Analyzed	
BTEX BY SW8021B		SW802	21B		Analyst: KKP	
Benzene	U	1	I.0 μg/L	1	7/1/2013 07:47 PM	
Toluene	U	1	I.0 μg/L	1	7/1/2013 07:47 PM	
Ethylbenzene	U	1	I.0 μg/L	1	7/1/2013 07:47 PM	
Xylenes, Total	U	3	3.0 µg/L	1	7/1/2013 07:47 PM	
Surr: 4-Bromofluorobenzene	98.7	75-1	29 %REC	1	7/1/2013 07:47 PM	
Surr: Trifluorotoluene	94.0	75-1	30 %REC	1	7/1/2013 07:47 PM	
Benzene Toluene Ethylbenzene Xylenes, Total <i>Surr: 4-Bromofluorobenzene</i>	U U U 98.7	75-1	1.0 μg/L 1.0 μg/L 1.0 μg/L 3.0 μg/L 29 %REC	1 1 1 1 1	7/1/2013 07:47 PM 7/1/2013 07:47 PM 7/1/2013 07:47 PM 7/1/2013 07:47 PM 7/1/2013 07:47 PM	

Client:	Navajo Refining Company
Work Order:	1306935
Project:	Gas-Oil Release Investigation

#### Date: 09-Jul-13

# QC BATCH REPORT

Batch ID: 71054	Instrument ID FID-7		Method	d: SW801	5M						
MBLK Sample ID:	FBLKS1-130626-71054				ι	Jnits: <b>mg/</b>	Kg	Analysis	s Date: 6/2	26/2013 0	3:00 PM
Client ID:	Run ID: I	FID-7_	130626B		Se	qNo: <b>326</b>	9372	Prep Date: 6/26/	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7									
TPH (Motor Oil Range)	U	3.4									
Surr: 2-Fluorobiphenyl	3.078	0.10	3.33		0	92.4	60-135	0			
LCS Sample ID:	FLCSS1-130626-71054				ι	Jnits: <b>mg/</b>	Kg	Analysis	s Date: 6/2	26/2013 0	3:24 PM
Client ID:	Run ID: I	FID-7_	130626B		Se	qNo: <b>326</b>	9373	Prep Date: 6/26/	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	27.01	1.7	33.33		0	81	70-130				
TPH (Motor Oil Range)	26.63	3.4	33.33		0	79.9	70-130				
Surr: 2-Fluorobiphenyl	2.192	0.10	3.33		0	65.8	60-135	0			
MS Sample ID:	1306935-01CMS				ι	Jnits: <b>mg/</b>	Kg	Analysis	s Date: 6/2	26/2013 0	4:35 PM
Client ID: BH-1 13-13.5	Run ID: I	FID-7_	130626B		Se	qNo: <b>326</b>	9375	Prep Date: 6/26/	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	296.6	1.7	33.3	18	33	341	70-130				SEO
TPH (Motor Oil Range)	59.93	3.4	33.3	13.2	25	140	70-130				S
Surr: 2-Fluorobiphenyl	3.895	0.10	3.327		0	117	60-135	0			
MSD Sample ID:	1306935-01CMSD				ι	Jnits: <b>mg/</b>	Kg	Analysis	s Date: 6/2	26/2013 0	4:58 PM
Client ID: BH-1 13-13.5	Run ID: I	FID-7_	130626B		Se	qNo: <b>326</b>	9376	Prep Date: 6/26/	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	268.8	1.7	33.3	18	33	258	70-130	296.6	9.81	30	SEO
TPH (Motor Oil Range)	55.27	3.4	33.3	13.2		126	70-130		8.09	30	-
Surr: 2-Fluorobiphenyl	3.65	0.10	3.327		0	110	60-135	3.895	6.49	30	
The following samples w	vere analyzed in this batch:	1	306935-01C 306935-04C 306935-07C	13	8069	935-02C 935-05C 935-08C		06935-03C 06935-06C			

Surr: 4-Bromofluorobenzene

Surr: Trifluorotoluene

### **QC BATCH REPORT**

DF: 1

RPD

Limit

Qual

Batch ID: R149530 Instrument ID BTEX3 Method: SW8021B MBLK Sample ID: BBLKS1-130625-R149530 Units: µg/Kg Analysis Date: 6/25/2013 01:26 PM Client ID: Prep Date: Run ID: BTEX3_130625A SeqNo: 3266651 SPK Ref RPD Ref Control Value Limit Value %REC Analyte Result PQL SPK Val %RPD U Benzene 1.0 Toluene U 1.0 U Ethylbenzene 1.0 Xylenes, Total U 3.0

30

30

0

0

118

107

75-131

73-130

0

0

1.0

1.0

35.53

32.05

LCS Sample ID: BLCSS1	-130625-R149530			Units: µg/Kg			٢g	Analy	vsis Date: 6	/25/2013 ⁻	12:46 PM
Client ID:	Run IE	: BTEX3	_130625A		Se	qNo: <b>326</b>	6650	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.34	1.0	20		0	112	74-129				
Toluene	22.24	1.0	20		0	111	75-128				
Ethylbenzene	22.64	1.0	20		0	113	73-127				
Xylenes, Total	67.34	3.0	60		0	112	74-127				
Surr: 4-Bromofluorobenzene	36.75	1.0	30		0	123	75-131		0		
Surr: Trifluorotoluene	32.29	1.0	30		0	108	73-130		0		

MS Sample ID: 1306935-04AMS	;				U	Inits: µg/ዞ	٢g	Analy	sis Date: 6	/25/2013 0	3:47 PM
Client ID: BH-3 14-15	Run ID:	BTEX3	_130625A		Se	qNo: <b>3266</b>	6658	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.79	1.0	20		0	104	74-129				
Toluene	20.49	1.0	20		0	102	75-128				
Ethylbenzene	20.86	1.0	20		0	104	73-127				
Xylenes, Total	62.26	3.0	60		0	104	74-127				
Surr: 4-Bromofluorobenzene	30.59	1.0	30		0	102	75-131		0		
Surr: Trifluorotoluene	28.13	1.0	30		0	93.8	73-130		0		

# **QC BATCH REPORT**

**Project:** Gas-Oil Release Investigation

MSD	Sample ID: 1306935-04	4AMSD				Units: µg/ł	٢g	Analysi	s Date: 6/2	25/2013 0	4:07 PM
Client ID: BH-	-3 14-15	Run ID	BTEX3	_130625A	S	SeqNo: <b>326</b>	6659	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		21.62	1.0	20	0	108	74-129	20.79	3.92	30	
Toluene		21.58	1.0	20	0	108	75-128	20.49	5.2	30	
Ethylbenzene		22.05	1.0	20	0	110	73-127	20.86	5.55	30	
Xylenes, Tota	I	66	3.0	60	0	110	74-127	62.26	5.83	30	
Surr: 4-Bro	mofluorobenzene	32.98	1.0	30	0	110	75-131	30.59	7.54	30	
Surr: Trifluo	protoluene	29.65	1.0	30	0	98.8	73-130	28.13	5.26	30	

1306935-08A

1306935-07A

### **QC BATCH REPORT**

Batch ID: R149566 Instrument ID FID-14 Method: SW8015

Batch ID: R149566 Instrume	nt ID FID-14		Metho	d: SW8018	5						
MBLK Sample ID: GBLKS-13	0625-R149566				U	nits: <b>mg/</b>	Kg	Ana	lysis Date: 6	/25/2013 1	2:15 PM
Client ID:	Run	ID: <b>FID-14</b>	_130625A		Sec	qNo: <b>326</b>	7424	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050									
Surr: 4-Bromofluorobenzene	0.1207	0.0050	0.1		0	121	70-130		0		
LCS Sample ID: GLCSS-13	0625-R149566				U	nits: <b>mg/</b>	Kg	Ana	lysis Date: 6	/25/2013 1	0:54 AM
Client ID:	Run	ID: <b>FID-14</b>	L_130625A		Sec	qNo: <b>326</b>	7423	Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9953	0.050	1		0	99.5	70-130				
Surr: 4-Bromofluorobenzene	0.1202	0.0050	0.1		0	120	70-130		0		
MS Sample ID: 1306935-0	8BMS				U	nits: <b>mg/</b>	Kg	Ana	lysis Date: 6	/25/2013 0	5:21 PM
Client ID: BH-4 16-17	Run	ID: <b>FID-14</b>	L_130625A		Sec	qNo: <b>326</b>	7437	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.025	0.050	1	0.0414	1	98.3	70-130				
Surr: 4-Bromofluorobenzene	0.1165	0.0050	0.1		0	117	70-130		0		
MSD Sample ID: 1306935-0	8BMSD				U	nits: <b>mg/</b>	Kg	Ana	lysis Date: 6	/25/2013 0	5:37 PM
Client ID: BH-4 16-17	Run	ID: <b>FID-14</b>	L_130625A		Sec	qNo: <b>326</b>	7438	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9769	0.050	1	0.0414	1	93.5	70-130	1.0	25 4.78	3 30	
Surr: 4-Bromofluorobenzene	0.1204	0.0050	0.1		0	120	70-130	0.11	65 3.26	5 <u>30</u>	
The following samples were analyz	ed in this batch:		306935-01B 306935-04B	-		35-02B 35-05B	-	06935-03B 06935-06B			

1306935-07B

1306935-08B

### **QC BATCH REPORT**

Batch ID: R149841 Instrument ID BTEX1 Method: SW8021B Sample ID: BBLKW1-130701-R149841 Units: µg/L MBLK Analysis Date: 7/1/2013 11:24 AM Prep Date: Client ID: Run ID: BTEX1_130701A SeqNo: 3274465 DF: 1 RPD Ref RPD SPK Ref Control Value Limit Value Limit Qual Analyte Result PQL SPK Val %REC %RPD U Benzene 1.0 Toluene U 1.0 U Ethylbenzene 1.0 Xylenes, Total U 3.0 Surr: 4-Bromofluorobenzene 28.76 1.0 30 0 95.9 75-129 0 Surr: Trifluorotoluene 0 0 28.23 1.0 30 94.1 75-130 LCS Sample ID: BLCSW1-130701-R149841 Analysis Date: 7/1/2013 11:06 AM Units: µg/L Client ID: Run ID: BTEX1_130701A SeqNo: 3274464 Prep Date: DF: 1 RPD **RPD** Ref SPK Ref Control Value Limit Value Limit PQL SPK Val %REC %RPD Qual Analyte Result Benzene 19.4 1.0 20 0 97 75-126 Toluene 19.36 1.0 20 0 96.8 75-125 Ethylbenzene 19.18 1.0 20 0 95.9 75-125 Xylenes, Total 57.94 0 3.0 60 96.6 75-125 29.35 30 0 0 Surr: 4-Bromofluorobenzene 1.0 97.8 75-129 0 Surr: Trifluorotoluene 29.63 1.0 30 0 98.8 75-130

MS	Sample ID: 13061031-12AM	S			I	Units: µg/l	-	Analy	sis Date: 7	/1/2013 03	3:41 PM
Client ID:		Run II	D: BTEX1	_130701A	Se	eqNo: <b>327</b>	4477	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		35.55	1.0	20	16.75	94	75-126				
Toluene		17.92	1.0	20	0	89.6	75-125				
Ethylbenzene	e	9.962	1.0	20	0	49.8	75-125				S
Xylenes, Tota	al	84.03	3.0	60	24.76	98.8	75-125				
Surr: 4-Bro	omofluorobenzene	32.89	1.0	30	0	110	75-129		0		
Surr: Triflu	ıorotoluene	83.99	1.0	30	0	280	75-130	)	0		S

Client:Navajo Refining CompanyWork Order:1306935Project:Gas-Oil Release Investigation

# **QC BATCH REPORT**

Batch ID: R1	49841 Instrume	ent ID BTEX1		Metho	d: SW8021B						
MSD	Sample ID: 13061031	-12AMSD			ι	Units: µg/L	-	Analysi	s Date: 7/	1/2013 03	:59 PM
Client ID:		Run IE	BTEX1	_130701A	Se	eqNo: <b>327</b>	4538	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		34.93	1.0	20	16.75	90.9	75-126	35.55	1.76	20	
Toluene		18.76	1.0	20	0	93.8	75-125	17.92	4.58	20	
Ethylbenzene	e	12.09	1.0	20	0	60.5	76-125	9.962	19.3	20	S
Xylenes, Tota	al	83.61	3.0	60	24.76	98.1	75-125	84.03	0.497	20	
Surr: 4-Bro	omofluorobenzene	34.91	1.0	30	0	116	75-129	32.89	5.94	20	
Surr: Triflu	iorotoluene	82.54	1.0	30	0	275	75-130	83.99	1.74	20	S

The following samples were analyzed in this batch:

1306935-09A

### **QC BATCH REPORT**

Batch ID: 7	1202 Instrument ID I	CS2100		Method	d: <b>E300</b>		(	(Dissolve	e)			
MBLK	Sample ID: WBLKS1-71202					ι	Jnits: <b>mg/</b> I	Kg	Analy	sis Date: 7	/1/2013 01	1:09 AM
Client ID:		Run	ID: ICS210	0_130701A		Se	qNo: <b>327</b> 4	4051	Prep Date: 6/2	29/2013	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		4.75	5.0									J
Surr: Sel	enate (surr)	55.34	1.0	50		0	111	85-115		0		
LCS	Sample ID: WLCSS1-71202					ι	Jnits: <b>mg/</b> I	Kg	Analy	sis Date: 7	/1/2013 01	1:24 AM
Client ID:		Run	ID: ICS210	0_130701A		Se	qNo: <b>327</b> 4	1052	Prep Date: 6/2	29/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		203.2	5.0	200		0	102	90-110				
Surr: Sel	enate (surr)	53.14	1.0	50		0	106	85-115		0		
MS	Sample ID: 1306935-08CMS						Jnits: <b>mg/</b> I					

Analysis Date: 7/1/2013 06:11 AM Units: mg/Kg Client ID: BH-4 16-17 Prep Date: 6/29/2013 DF: 1 Run ID: ICS2100_130701A SeqNo: 3274071 SPK Ref RPD Ref RPD Control Value Limit Value Limit SPK Val %REC %RPD Qual Analyte Result PQL Chloride 117.8 4.2 83.63 8.155 131 75-125 S Surr: Selenate (surr) 47.22 0.84 41.81 0 113 80-120 0

MSD	Sample ID: 1306935-08CMS	D				Units: <b>mg/</b>	ΊKg	Analys	is Date: 7/	1/2013 06	:25 AM
Client ID: BI	H-4 16-17	Run ID	ICS210	0_130701A	S	eqNo: <b>327</b>	4072	Prep Date: 6/29	0/2013	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		117.6	4.2	83.37	8.155	131	75-125	117.8	0.158	20	S
Surr: Sele	enate (surr)	46.86	0.83	41.68	0	112	80-120	47.22	0.775	20	
The following	ng samples were analyzed in t	his batch:	1	306935-01C 306935-04C 306935-07C	1306	935-02C 935-05C 935-08C		06935-03C 06935-06C			

Client: Project: WorkOrder:	Navajo Refining Company Gas-Oil Release Investigation <b>1306935</b>	QUALIFIERS, ACRONYMS, UNITS
Qualifier	Description	
*	Value exceeds Regulatory Limit	
а	Not accredited	
В	Analyte detected in the associated Method Blank above the F	Reporting Limit
Е	Value above quantitation range	
Н	Analyzed outside of Holding Time	
J	Analyte detected below quantitation limit	
М	Manually integrated, see raw data for justification	
n	Not offered for accreditation	
ND	Not Detected at the Reporting Limit	
0	Sample amount is > 4 times amount spiked	
Р	Dual Column results percent difference > 40%	
R	RPD above laboratory control limit	
S	Spike Recovery outside laboratory control limits	
U	Analyzed but not detected above the MDL	
Acronym	Description	
DCS	Detectability Check Study	
DUP	Method Duplicate	
LCS	Laboratory Control Sample	
LCSD	Laboratory Control Sample Duplicate	
MBLK	Method Blank	
MDL	Method Detection Limit	
MQL	Method Quantitation Limit	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	
PDS	Post Digestion Spike	
PQL	Practical Quantitation Limit	
SD	Serial Dilution	
SDL	Sample Detection Limit	
TRRP	Texas Risk Reduction Program	
Units Reported	1 Description	
μg/Kg	Micrograms per Kilogram	
μg/L	Micrograms per Liter	
mg/Kg	g Milligrams per Kilogram	

#### Sample Receipt Checklist

Client Name: NAVAJO REFINING		Date/Time F	Received:	<u>22-Jun-13</u>	<u>09:45</u>
Work Order: <u>1306935</u>		Received by	y:	<u>RDH</u>	
Checklist completed by $\frac{Paresk M. G_{iga}}{eSignature}$	24-Jun-13 Date	Reviewed by:	Sonia X eSignature	Vest	25-Jun-13 Date
Matrices:soil/WaterCarrier name:FedEx					
Shipping container/cooler in good condition?	Yes 🗸	No 🗌	Not Pre	sent	
Custody seals intact on shipping container/cooler?	Yes 🗸	No	Not Pre	sent	
Custody seals intact on sample bottles?	Yes	No	Not Pre	sent 🗹	
Chain of custody present?	Yes 🗸	No			
Chain of custody signed when relinquished and received?	Yes 🗸	No			
Chain of custody agrees with sample labels?	Yes 🗸	No			
Samples in proper container/bottle?	Yes 🗸	No			
Sample containers intact?	Yes 🗸	No			
Sufficient sample volume for indicated test?	Yes 🗸	No			
All samples received within holding time?	Yes 🗸	No			
Container/Temp Blank temperature in compliance?	Yes 🗸	No			
Temperature(s)/Thermometer(s):	<u>2.3c/2.3c,1</u> .2c C/U	1.9c/1.9c,2.7c/2.7	c,3.2c/3	<u> </u>	
Cooler(s)/Kit(s):	4696,4096	,3172,3036			
Date/Time sample(s) sent to storage:	6/24/13 13	:15			
Water - VOA vials have zero headspace?	Yes 🗸	No	No VOA via	ls submitted	
Water - pH acceptable upon receipt?	Yes	No	N/A		
pH adjusted? pH adjusted by:	Yes 🗌	No 🗌	N/A		
Login Notes:					

Client Contacted:	Date Contacted:	Person Contacted:	
Contacted By:	Regarding:		
Comments:			
CorrectiveAction:			
			S

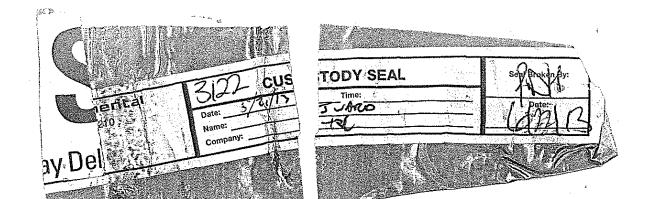
______

	Cincinnati, OH +1 513 733 5336	Fort Collins, CO +1 970 490 1511	Chain of Custody For	For	1306935	л, WV 8
	Everett, WA +1 425 356 2600	Holland, MI +1 616 399 6070	Page 1 of		NAVAJO REFINING: Navajo Refining Company	0
ALS			coc ID: 82290	00	Project: 196364.5000.0000	
ertantorio 			ALS Project Manager:	ger:		
Custor	Customer Information		Project Information			
Purchase Order		Project Name		A	BTEX (8021)	
Work Order		Project Number	196364, 5000.0000	œ	GRO (8015)	
Company Name Nar	Navajo Refining Company	Bill To Company	Navajo Refining Company	Ö	DRO (8015)	
Send Report To	Robert Combs , Beyw Cottager	r Invoice Attn	Robert Combs	0	ORO (8015)	
507 Address	501 East Main	Address	501 East Main	ш	Anions (300) Cl	
				L	Chioride & Sulfate (300)	
City/State/Zip Art	Artesia, NM 88211	City/State/Zip	Artesia, NM 86211	g		
Phone (50	(505) 748-3311	Phone	(575) 748-6733	T		
Fax (50	(505) 746-5421	Fax	(575) 746-5421			
e-Mail Address		e-Mail Address		0		
No. Sam	Sample Description	Date	Time Matrix Pres. # Bottles	ttes	B C D E F G H - 7	Hold
10 BU-1 15-	135	6-14-13 2030	30 6.1 8 3		××× ×××	
24 84-1 6-	~	0/12 1				
3 BH-3 7.8		8	222			
4 RH-3 14-1		N 22	2230			
5 BH-2 12-	/3	6-20-13 10	1030			
6 BH-2 14-1	14.5~	1 /0	1040			
7 BU-4 14-1	15	1.3	045,			
· BU-4 16-1	.2	V 13.	1 1 N QSE		> } }	
78-06-21-	13-61		- LINTER 2/3 2	4		
sase Pri	ign (1)	Shipment Method	Requ	ne: (Check		
Relinquished by	er/ ict	Time:	Received by:		10 Day TAT. CC rel	
Relinquished by:			Received by Laboratory: (02) 10, 102 10	NO	S C	TREE Chartelet
Logged by (Laboratory):	Date:	Time: Check	(Laboratory):		Level II SId OC/Raw Data TRRP Level IV SVI346/CLP	Wel IV
Preservative Key: 1-HCI	2-HNO ₃ 3-H ₂ SO ₄	4-NaOH 5-Na2S203 6	6-NaHSO4 7-Other 8-4°C 9-50	9-5035	Olher / EDD	
Note: 1. Any changes must I	be made in writing once samples and C	OC Form have been s	Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental. Unlass otherwise nerved in a formed contrast services environs that ATS Environmental and surveyed in the terms	ond oor hite	Copyright 2011 by ALS Environmen	nmen

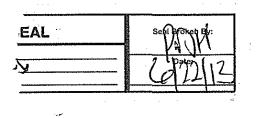
Unless otherwise agreed in a format contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 The Chain of Custody is a legal document. All information must be completed accurately.



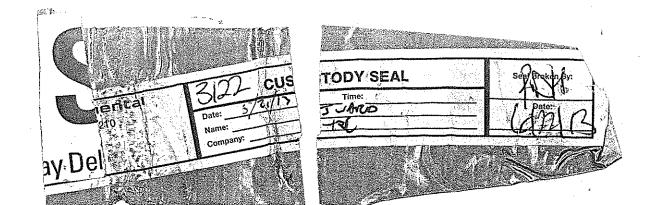




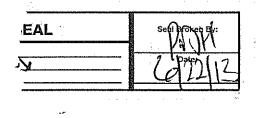
nental 2 CUSTODY S 3 Date: GAN Time: Name: An Сотрапу:







nental 2 **CUSTODY S** 75 Date: Time: 6121 -AT Name: r Company:



### ATTACHMENT F

SSL Calculation for Chloride Leaching to Groundwater

EVALUATION OF SOIL SCREENING LEVEL	FOR CHLORIDE LEACHING TO GROUNDWATER

$$SSL = C_{w} \times \left[ K_{d} + \left( \frac{\theta_{w} + \theta_{a} H'}{\rho_{b}} \right) \right]$$

Parameter	Definition (units)	Value	Source of Value
SSL	Soil Screening Level for migration to groundwater pathway (mg/kg)	867	Calculated (above equation)
Cw	Target soil leachate concentration (mg/L)	5,000	Calculated; Cw=NM WQCC Human Health Standard x DAF
HHS	Chloride WQCC Human Health Standard (mg/L)	250	20.6.2.3103 of the New Mexico Administrative Code
DAF	Dilution Attenuation Factor (unitless)	20	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
θ	Water-filled soil porosity (L _{water} /L _{soil} )	0.26	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
K _d	Soil-water partition coefficient (L/kg)	0.00	Default conservative value
θa	Air-filled soil porosity (L _{air} /L _{soil} )	0.17	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
Н'	Henry's Law Constant (unitless)	0.00	Default conservative value
ρ _b	Dry soil bulk density (kg/L)	1.50	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)

### ATTACHMENT G

Material Safety Data Sheet for Gas Oil

HOLLYFRONTIER NAVAJO REFINING COMPANY, LLC

### MATERIAL SAFETY DATA SHEET - GAS OIL

#### **SECTION 1 - PRODUCT and COMPANY IDENTIFICATION**

#### MANUFACTURER:

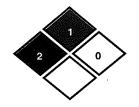
#### **CONTACT INFORMATION:**

NAVAJO REFINING COMPANY, LLC PO BOX 159 ARTESIA, NM 88211-0159 Main Telephone – (575) 748-3311 Safety Department – (575) 365-8364 (24 Hours) Environmental Department – (575) 365-8365 (24 Hours)

#### EMERGENCY PHONE NUMBERS:

CHEMTREC: 1-800-424-9300 (for fire, spill and emergency response information) New Mexico Poison Information Center: 1-800-432-6866 Texas (El Paso) Poison Information Center: (915) 533-1244 Arizona Poison Information Center: 1-800-362-0101 or (602) 253-3334

PRODUCT NAME: Gas Oil CAS NUMBER: 68783-08-4 CHEMICAL FAMILY: Petroleum Hydrocarbon FORMULA: Mixture SYNONYMS: FCC Feed Stock, VGO, Flasher Gas Oil, AGO, Light Vacuum Gas Oil, LVGO, Heavy Vacuum Gas Oil, HVGO



NFPA 704 (SECTION 16)

#### **SECTION 2 - HAZARDOUS INGREDIENTS**

HAZARDOUS			OSHA LIN	IITS (TWA)	NIO	SH LIMITS	(TWA)	ACGIH LI	MITS (TWA)
COMPONENTS	VOL %	CAS NO.	PEL	STEL	REL	STEL	IDLH	TLV	STEL
Gas Oil Containing	100%	68783-08-4	NE	NE	NE	NE	NE .	NE	NE
Vacuum Distillate	40%	70592-78-8	NE	NE	NE	NE	NE	NE	NE

OTHER INGREDIENT INFORMATION: Gas Oil may contain traces of sulfur. NE designates Not Established.

#### **SECTION 3 - PHYSICAL DATA**

BOILING POINT: 350° - 1000°FSPECIFIC GRAVAPOR PRESSURE: <1.0 mmHg @20°C</td>% VOLATILE B'VAPOR DENSITY (AIR=1): N/AEVAPORATIONSOLUBILITY IN WATER: NegligibleAUTOIGNITIONODOR THRESHOLD: N/AAPPEARANCE AND ODOR: Dark brown liquid with a hydrocarbon odor.*Data for Fuel Oil #4.*

SPECIFIC GRAVITY (WATER=1): 0.914 – 0.928 % VOLATILE BY VOLUME: 0% EVAPORATION RATE: N/A AUTOIGNITION TEMP: 505°F*

#### <u>GAS OIL</u>

#### **SECTION 4 - FIRE AND EXPLOSION HAZARD DATA**

CLASSIFICATION: Class IIIB

FLASH POINT: >200°F

FLAMMABLE LIMITS: LEL = 1.0%* UEL = 5.0%*

EXTINGUISHING MEDIA: Dry chemical (Class B fire extinguisher), carbon dioxide (CO₂), water spray or foam SPECIAL FIRE FIGHTING PROCEDURES: Move container from fire area, if possible. Use water to keep fire-exposed containers cool. Use foam for spill control.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Evacuate a radius of 1500 feet for uncontrolled fires. Vapors are heavier than air and may travel great distances and flash back. Extinguish only if flow can be stopped.

*Data for Fuel Oil No. 4.

NFPA FIRE = 1 (low)

#### SECTION 5 - REACTIVITY DATA

STABILITY: Stable HAZARDOUS POLYMERIZATION: Will not occur CONDITIONS TO AVOID/INCOMPATABILITY: Strong oxidizers HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, sulfur dioxide

#### NFPA REACTIVITY = 0 (minimal)

#### SECTION 6 - HEALTH HAZARD DATA

ROUTES OF ENTRY: Ingestion, skin contact, inhalation.

HEALTH HAZARDS: Depression of central nervous system ranging from mild headache to anesthesia, coma, and death. Liver and kidney damage may occur.

CARCINOGENICITY: No data available.

SIGNS AND SYMPTOMS OF EXPOSURE: May cause nausea, vomiting, dizziness, headache, coughing or gagging and depression of the central nervous system.

#### EMERGENCY AND FIRST AID PROCEDURES:

- INGESTION: Immediately seek medical attention. <u>DO NOT</u> induce vomiting. Give water to dilute, if conscious. Extreme care must be used to prevent aspiration.
- INHALATION: Maintain respiration, assist with artificial respiration if needed and give oxygen if available and trained to do so. Seek medical attention.

#### NFPA HEALTH = 2 (Moderate)

#### GAS OIL

#### SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate all sources of ignition. Contain spill. Use water fog to dilute or foam to suppress vapor cloud. Use SCBA to avoid breathing vapors. Absorb liquid with sand or clay. Larger spills may be picked up with a vacuum truck.

WASTE DISPOSAL: Dispose in accordance with RCRA regulations. Do not put in sewers or any watercourse.

- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: All equipment and storage containers should be properly grounded. This material is subject to OHSA and DOT regulations. Portable metal containers should be bonded to the storage container before transferring liquid.
- OTHER PRECAUTIONS: Do not weld on containers unless they have been properly cleaned and purged using safe work practices. Avoid breathing vapors.

#### **SECTION 8 - ENVIRONMENTAL AND SPECIAL PROTECTION INFORMATION**

- RESPIRATORY PROTECTION: Use NIOSH/MSHA-approved respiratory protection in areas exceeding exposure limits, the type to be determined by the degree of exposure.
- VENTILATION: Use in well-ventilated area. Mechanical exhaust should be explosion-proof.

EYE/SKIN PROTECTION: Full-face protection, chemical protective gloves, and coveralls with long sleeves.

WORK/HYGIENIC PRACTICES: Remove contaminated clothing as soon as possible. Always wash after handling hazardous chemicals.

REFER TO DEPARTMENT OF TRANSPORTATION (DOT) EMERGENCY RESPONSE GUIDEBOOK GUIDE 128 FOR ADDITIONAL EMERGENCY INFORMATION.

This information is believed to be accurate and as reliable as information available to us. We make no warranty or guarantee as to its accuracy and assume no liability from its use. Users should determine the suitability of the information for their particular purposes.

#### 

**ASTM D-97 Pour Point of petroleum products** 

ASTM D-97 <u>85°F</u>

ASTM D-4402 Rotational Viscosity @ temperatures below

ASTM D-4402 @ 80°F _ 2780

ASTM D-4402 @ 90°F 678

ASTM D-4402 @ 100°F ______

ASTM D-4402 @ 110°F ____61____

ASTM D-4402 @ 120°F _____36_____

ASTM D-4402 @ 200°F _____19.2 ____

ASTM D-4402 @ 210°F _____17.6_____

DATE 7/30/12

#1 TESTER <u>R.GREEN / M.BROWN</u>

Note: From R. Green 10/17/12, units are Centipoise, cP (phone call w/D.Boyer)

### Chavez, Carl J, EMNRD

From:	Chavez, Carl J, EMNRD
Sent:	Friday, September 13, 2013 4:11 PM
То:	Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc:	Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD; Bratcher, Mike, EMNRD
Subject:	FW: 7/1/13 Fuel Oil Spill
Attachments:	NRC Fuel Oil #6 - 07-2011.pdf

Robert:

Good afternoon. Can you give the agencies the status of the cleanup for the above fuel oil release in the rail loading area on 7/1/2013?

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 Office: (505) 476-3490 E-mail: <u>Carl J. Chavez@State.NM.US</u> Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Thursday, July 18, 2013 3:27 PM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike
Subject: FW: 7/1/13 Fuel Oil Spill

Carl,

Following our conversation, I want to confirm that we should analyze for:

- TPH-GRO cleanup level: <100 ppm</li>
- TPH-DRO cleanup level: <100 ppm</li>
- BTEX cleanup level: <50 ppm; benzene cleanup level <10 ppm</p>

The first group of samples was received by the lab today, so I will update them ASAP so they can get started.

Please call me if you think of anything else.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159

#### office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 <u>Robert.Combs@hollyfrontier.com</u>

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From: Combs, Robert Sent: Thursday, July 18, 2013 2:42 PM To: 'Chavez, Carl J, EMNRD' Cc: Holder, Mike Subject: FW: 7/1/13 Fuel Oil Spill

Carl,

Attached is the MSDS for the material released. The final C-141 will include:

- Color photos of the excavated area
- Analytical reports
- Markup of spill location indicating lateral extent and sample locations.

As I mentioned earlier, NMED-HWB asked that we run TPH-DRO; are there any other analytes that you would suggest besides BTEX?

We are currently preparing a workplan to address spills within the refineries, but the draft is not yet complete. The fuel oil spill has already been cleaned with the following approach:

- 1. Free liquid was removed.
- 2. Saturated and stained soil was excavated.
- 3. Samples were collected of the clean soil in the bottom of the excavation.

The lab has received the first group of samples and we need to finalize the analytical suite so they can get started.

I'll give you a call in a few minutes to discuss further.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, July 11, 2013 7:47 AM
To: Combs, Robert; Horowitz, Ruth, NMENV
Cc: Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Dhawan, Neelam, NMENV; VonGonten, Glenn, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: 7/1/13 Fuel Oil Spill

Robert:

Good morning. Could you please provide an MSDS that describes the specific type of fuel oil (see sample list below) released to the ground. The water table as I recall is about 25 - 30 below ground level.

The final C-141 should also include color photos of the excavation with analytical data provided as verification of remediation.

·····			
Product Name	Manufacturer Name	Issue Date	Language Doc. Ref. View MSDS
1 ■ <u>#2 Fuel Oil</u>	Somerset Refinery Incorporated	1995-12-12	English 431198 🔁
2 ■ <u>#6 Fuel Oil</u>	Somerset Refinery Incorporated	2003-02-11	English 407047 🛣
3 🏾 <u>#6 Fuel Oil / Road Oil</u>	Somerset Refinery Incorporated	2003-02-11	English 407047 🛃
4 * ASTM D396; Diesel Oil; Home Heating Oil; No. 2 Fuel Oil; Number 2 Burner Fuel	National Cooperative Refinery Association	2012-06-12	English 2040720 🔂
5 • <u>Burner Fuel, No. 5 Fuel Oil</u>	<u>Giant Refining Co. / / Giant</u> <u>Yorktown Refinery</u>	2006-06-21	English 1005433 🔂
6 🛊 <u>Diesel Fuel Oil</u>	Giant Refining Co. / / Giant Yorktown Refinery	2006-07-01	English 1005434 🔀
7 ♦ <u>Fuel Oil #1</u>	National Cooperative Refinery Association	1992-11-20	English 2446766 🔁
8 🔳 <u>Fuel Oil #1</u>	Petro Star North Pole Refinery	2005-01-28	English 3524083 🔁
9 ♦ <u>Fuel Oil 2</u>	Petro Star North Pole Refinery	2005-08-25	English 3524084 🔀
10♦ <u>Fuel Oil No. 1</u>	<u>Giant Refining Co. / / Giant</u> Yorktown Refinery	2006-08-17	English 881079 🛃
11 Fuel Oil No. 1	National Cooperative Refinery Association	2010-12-14	English 2040719 🔀
Fuel Oil No. 1; Coal Oil; 12* Range Oil; Kerosene; K-10; Kerosene; Gasoline,	National Cooperative Refinery Association	2010-12-14	English 2040719 🔂
13♦ <u>Fuel Oil No. 2</u>	National Cooperative Refinery Association	2005-12-19	English 1536633 🔂
14♦ <u>Fuel Oil No. 2</u>	National Cooperative Refinery Association	2012-06-12	English 2040720 🔂
15 Fuel Oil No. 5	<u>Giant Refining Co. / / Giant</u> <u>Yorktown Refinery</u>	2006-06-21	English 1005433 🔂
16∎ <u>Fuel Oil No. 5</u>	<u>Giant Refining Co. / / Giant</u> Yorktown Refinery	2006-06-21	English 1005433 🔂
17 1FB #1 Fuel Oil	Indiana Farm Bureau Refinery	2000-04-01	English 39601 📆
18	National Cooperative Refinery Association	2012-12-07	English 1535183 🔂
19♦ <u>No. 2 Fuel Oil</u>	<u>Giant Refining Co. / / Giant</u> Yorktown Refinery	2006-07-01	English 1005434 🔂
20♦ <u>No. 2 Fuel Oil</u>	National Cooperative Refinery Association	2005-12-19	English 1536633 🔂
21 • <u>No. 2 Fuel Oil</u>	National Cooperative Refinery Association	2012-06-12	English 2040720 🔂

22■ <u>ULSD No. 1 Fuel Oil</u>	National Cooperative Refinery Association	2010-12-14	English 2040719 🔀
23 ULSD No. 2 Fuel Oil	National Cooperative Refinery Association	2012-06-12	English 2040720 🔀

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 Office: (505) 476-3490 E-mail: <u>Carl J. Chavez@State.NM.US</u> Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Wednesday, July 10, 2013 4:36 PM
To: Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc: Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD
Subject: FW: 7/1/13 Fuel Oil Spill

Ruth and Carl,

Attached is the Initial C-141 report for the fuel oil spill at the Artesia refinery on 7/1/13. A final C-141 report will follow and will include photos and waste disposal details.

If there are any questions, please call me at 575-308-2718.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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## From: Combs, Robert Sent: Tuesday, July 09, 2013 4:50 PM To: 'Chavez, Carl J, EMNRD'; Ruth Horowitz (<u>ruth.horowitz@state.nm.us</u>) Cc: Holder, Mike Subject: 7/1/13 Fuel Oil Spill Importance: High

Ruth and Carl,

I just realized that I inadvertently missed the deadline for submittal of the initial C-141 report for the fuel oil spill on July 1, 2013. I need to collect a few last details and will do my best to have it submitted to you by the end of the day tomorrow (7/10/13).

Sorry for the delay. Robert

## **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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# HOLLY FRONTIER NAVAJO REFINING COMPANY, LLC

# MATERIAL SAFETY DATA SHEET - #6 FUEL OIL

## SECTION 1 - PRODUCT and COMPANY IDENTIFICATION

#### MANUFACTURER:

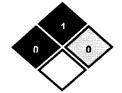
#### **CONTACT INFORMATION:**

NAVAJO REFINING COMPANY, LLC PO BOX 159 ARTESIA, NM 88211-0159 Main Telephone – (575) 748-3311 Safety Department – (575) 365-8364 (24 Hours) Environmental Department – (575) 365-8365 (24 Hours)

#### **EMERGENCY PHONE NUMBERS:**

CHEMTREC: 1-800-424-9300 (for fire, spill and emergency response information) New Mexico Poison Information Center: 1-800-432-6866 Texas (El Paso) Poison Information Center: (915) 533-1244 Arizona Poison Information Center: 1-800-362-0101 or (602) 253-3334

PRODUCT NAME: #6 Fuel Oil CAS NUMBER: 68476-33-5 CHEMICAL FAMILY: Aromatic Hydrocarbon FORMULA: N/A SYNONYMS: UN 1993 Fuel Oil, Bunker C, Residual Fuel Oil #6 SHIPPING NAME: Fuel Oil (No. 6), 3 Combustible, NA 1993, 111



NFPA 704 (SECTION 16)

#### SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS			OSHA LIMITS (TWA)		NIOSH	LIMITS (	ACGIH LIMITS (TWA)		
COMPONENTS	VOL %	CAS NO.	PEL	STEL	REL	STEL	IDLH	TLV	STEL
Fuel Oil, Residual	100%	68476-33-5	5 mg/m ³ *	5 mg/m ³ *	NE	NE	NE	5 mg/m ³ *	NE
Hydrogen Sulfide	Trace	7783-06-4	10 ppm C**	50 ppm (Max)	10 ppm C	N/A	100 ppm	10 ppm	15 ppm

OTHER INGREDIENT INFORMATION: Complex mixture of high boiling point hydrocarbons. This product contains trace amounts of hydrogen sulfide, a toxic gas. * Oil mist, mineral.

NOTE: ** NM OSHA limit (normally 20 ppm C). C designates Ceiling Value, which should not be exceeded at any time. (Max) designates 10-minute maximum peak value, which should not to be exceeded at any time. NE designates Not Established.

#### **SECTION 3 - PHYSICAL DATA**

BOILING POINT: >700°FSPECIFIC GRAVITY (WATER=1): 0.9-1.1VAPOR PRESSURE: N/A% VOLATILE BY VOLUME: 0%VAPOR DENSITY (AIR=1): N/AEVAPORATION RATE: N/ASOLUBILITY IN WATER: InsolubleAUTOIGNITION TEMP: 760°FODOR THRESHOLD: N/AAPPEARANCE AND ODOR: Thick black liquid at room temperature with an odor of asphalt.

## #6 FUEL OIL

## SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

CLASSIFICATION: Class IIIA, Combustible Liquid

FLASH POINT: >150°F (COC)

FLAMMABLE LIMITS: LEL = 1.0 UEL = 20.0

EXTINGUISHING MEDIA: Dry chemical (Class B fire extinguisher), carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Move container from fire area, if possible. Use water to keep fireexposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Evacuate a radius of 1500 feet for uncontrolled fires. Water or foam may cause frothing and evolution of steam. Gases may accumulate from low boiling hydrocarbons and hydrogen sulfide. Iron sulfide may also accumulate.

NFPA FIRE = 2 (moderate)

## SECTION 5 - REACTIVITY DATA

STABILITY: Stable HAZARDOUS POLYMERIZATION: Will not occur CONDITIONS TO AVOID/INCOMPATABILITY: Strong oxidizers. HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, sulfur dioxide

NFPA REACTIVITY = 0 (minimal)

## SECTION 6 - HEALTH HAZARD DATA

- ROUTES OF ENTRY: At room temperature, No. 6 Fuel Oil is a thick liquid. This material is frequently transported and stored hot. Burns or exposure to product fumes may occur from product at elevated temperatures.
- HEALTH HAZARDS: Dermatitis, eye, skin or lung irritation. Hot fuel oil can cause severe burns. Exposure to over 600 ppm of hydrogen sulfide can be rapidly fatal.
- CARCINOGENICITY: While No. 6 Fuel Oil is not listed by NTP or IARC as a human carcinogen, it contains polycyclic aromatic hydrocarbons which the NTP lists as anticipated human carcinogens.
- SIGNS AND SYMPTOMS OF EXPOSURE: Skin irritation, irritation of nose and throat, burns from contact with hot fuel oil.

#### EMERGENCY AND FIRST AID PROCEDURES:

- INHALATION: Maintain respiration, assist with artificial respiration if needed and give oxygen if available and trained to do so. Seek medical attention.
- BURNS: Immediately cool skin by quenching with cold water. Cover with a sterile dressing and seek medical assistance.

NFPA HEALTH = 2 (moderate)

## #6 FUEL OIL

#### SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

- STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain spill. Allow to cool. Remove sources of ignition. Absorb using clay or earth and pick up with shovels ;or tractors. Place in appropriate waste containers.
- WASTE DISPOSAL: Dispose in accordance with RCRA regulations. Do not put in sewers or any water course.
- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Fuel oil is normally stored at high temperatures. It can cause severe burns.
- OTHER PRECAUTIONS: Avoid breathing vapors. Always wear protective equipment and clothing when handling hot fuel oil. Do not weld on containers unless they have been properly cleaned and purged using safe work practices.

## SECTION 8 - ENVIRONMENTAL AND SPECIAL PROTECTION INFORMATION

- RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respiratory protection in areas exceeding exposure limits, the type to be determined by the degree of exposure.
- VENTILATION: Use in well ventilated area. Mechanical exhaust should be explosion proof. Be aware that a hazardous concentration of vapors may form in headspace of tanks above hot product.
- EYE/SKIN PROTECTION: Full face protection, heavy leather gloves if hot, and coveralls with long sleeves. Wear impervious gloves to avoid skin contact.
- WORK/HYGIENIC PRACTICES: Remove contaminated clothing as soon as possible. Always wash after handling hazardous chemicals.
- NOTICE: This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### REFER TO DEPARTMENT OF TRANSPORTATION (DOT) EMERGENCY RESPONSE GUIDEBOOK GUIDE 111 FOR ADDITIONAL EMERGENCY INFORMATION.

This information is believed to be accurate and as reliable as information available to us. We make no warranty or guarantee as to its accuracy and assume no liability from its use. Users should determine the suitability of the information for their particular purposes.

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Wednesday, July 10, 2013 4:36 PM
То:	Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc:	Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD
Subject:	FW: 7/1/13 Fuel Oil Spill
Attachments:	C-141 2013-0701 Fuel Oil Spill initial report and aerial photo 071013.pdf

Ruth and Carl,

Attached is the Initial C-141 report for the fuel oil spill at the Artesia refinery on 7/1/13. A final C-141 report will follow and will include photos and waste disposal details.

If there are any questions, please call me at 575-308-2718.

Thanks, Robert

## **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Combs, Robert Sent: Tuesday, July 09, 2013 4:50 PM To: 'Chavez, Carl J, EMNRD'; Ruth Horowitz (<u>ruth.horowitz@state.nm.us</u>) Cc: Holder, Mike Subject: 7/1/13 Fuel Oil Spill Importance: High

Ruth and Carl,

I just realized that I inadvertently missed the deadline for submittal of the initial C-141 report for the fuel oil spill on July 1, 2013. I need to collect a few last details and will do my best to have it submitted to you by the end of the day tomorrow (7/10/13).

Sorry for the delay. Robert

## **Robert Combs**

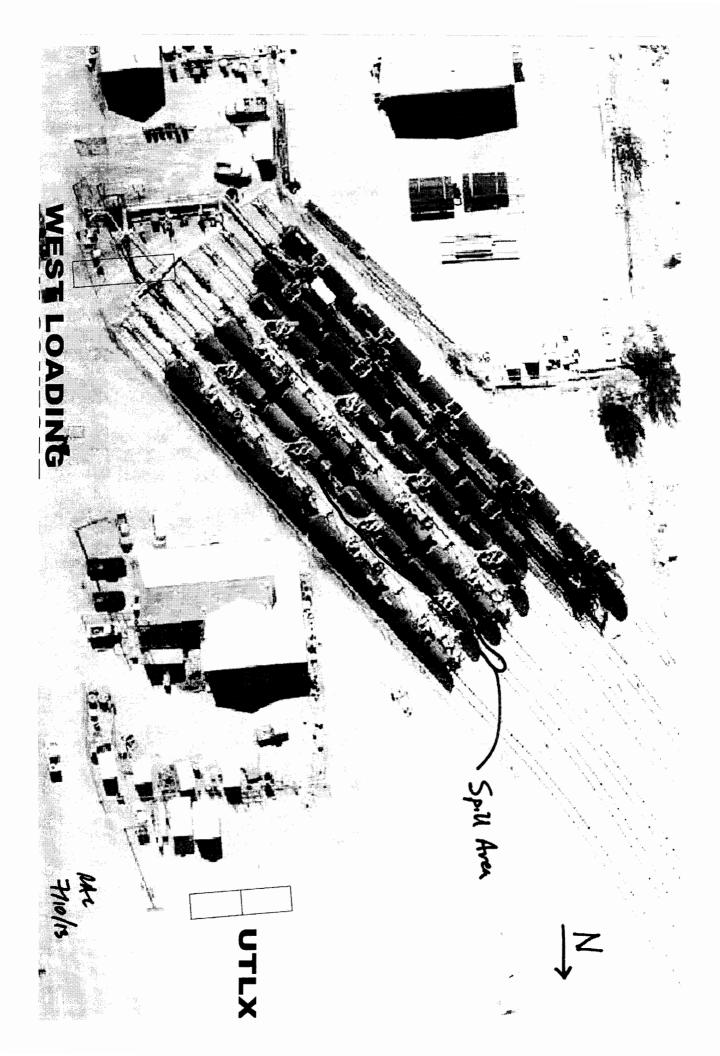
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District II	Dr., Hobbs, NM 88; Artesia, NM 88210				New Mexico and Natural Resources Revised			Form C-141 Revised August 8, 2011			
District III	s Road, Aziec, NM 1					rvation Div h St. Franc		Submit I Co			ate District Office in ith 19.15.29 NMAC.
	cis Dr., Santa Fe, N	M 87505				e, NM 875					
Release Notification and Corrective Action											
						<b>OPERA</b>	FOR	🖾 ln	itial F	Report	Final Report
	ompany Navaj						Robert Combs 40. 575-746-5	1 20			
	01 E. Main St, A me Artesia Rofi		NM 882	10		Telephone P Facility Typ					
Surface Ow				Mineral C				API	No		
Surface Ow	ner	N				NORDE	E A GE	Ari	NU.		
Unit Letter	Section Tow	nship	Range	LOCA Feet from the		N OF RE	Feet from the	East/West Lin	elC	ounty	
0.00		a.c.a.p									
L	L			Latitad		Longi					
						E OF REL					
Type of Rele	ase Fuel Oil	]	•	19A1	URI		Release ~150 b				~ 30 bbl
Source of Re	lease Rail load	ling area					Hour of Occurrence			our of Di	
Was Immedi	ate Notice Given?					If YES, To	07/01/2013 at ~17:15 07/01/2013 at ~17:30 If YES, To Whom?				
		$\boxtimes$	Yes 🗌	No 🗌 Not R	equired		OCD Santa Fe, Carl Chavez, left message OCD Artesia, Randy Dade				
						NMED Sa	nta Fe, Ruth Horo		inc), l	left mess	age
By Whom?	Mike Holder/R course Reached?		mbs				lour 7/1/13 at				
was a watch	course Reached?		Yes 🗵	No		11 1 E.S. V	siume impacting	the watercourse			
	urse was Impacted										
At ~17:30 on had inadverte noticed the s	ently began to fill pill, he immediate	reported one raile ely shut c	i that a rai car instea lown the	l car had been ov d of the two he ha transfer pump are	d plan d close	ned, which all d the valve to	owed the one car t he railcar. The in	to more quickly	than e	expected	I. The BPL operator . When the operator the rail loading racks
and was approximately 100 feet long by 30 feet wide (see attached aerial photo markup of area). Describe Area Affected and Cleanup Action Taken.* The spill was contained between the two rails and some small containment berms. Vacuum trucks were dispatched to the area and were able to recover approximately 30 bbls of the spilled product. Excavation of the impacted area is underway and the stained material will be disposed at a non-hazardous disposal facility.											
A final C-14	l including photo	s and wa	iste dispo	sal information w	ill foll	ow,					
regulations a public health should their o or the enviro	ify that the inform il operators are re- or the environme operations have fa- nment. In additio , or local laws and	equired to ent. The ailed to a on, NMO	a report a acceptan idequately ICD accept	nd/or file certain ce of a C-141 rep investigate and	release ort by i remedi	notifications a the NMOCD r atc contaminal	and perform corre narked as "Final F tion that pose a the ve the operator of	ctive actions for Report [#] does not reat to ground w responsibility f	relea reliev ater, or cot	ses whie ve the op surface v npl:ance	ch may endanger berator of liability water, human health b with any other
C.	nal	ik					OIL CON	SERVATIO	DNI	DIVISI	ION
Signature: Printed Nam	e: Robert Comb	s	<u> </u>			Approved by	y Environmental 5	Specialist:			
	vironmental Speci					Approval D	ate:	Expirat	ion D	ate:	
E-mail Addr	ess: robert.com	bs@holl		Conditions	of Approval:			Attache	cd 🔲		

Date: 07/10/13 Phone: 575-308-2718
* Attach Additional Sheets If Necessary



From:	Chavez, Carl J, EMNRD
Sent:	Thursday, September 12, 2013 2:31 PM
То:	Schultz, Michele (Michele.Schultz@hollyfrontier.com)
Cc:	Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Dade, Randy, EMNRD; Horowitz, Ruth, NMENV
Subject:	FW: NRC#1059999 Release ~ 5 bbl Carbon Black Oil to Eagle Draw Drainage Tributary

Miki:

Please submit a C-141 Form to me with a copy to the OCD Artesia District Office. The Final C-141 should include photos of the release before and after cleanup.

Eagle Draw may be considered "Waters of the State" as this drains eastward to the Pecos River.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 Office: (505) 476-3490 E-mail: CarlJ.Chavez@State.NM.US Website: http://www.emnrd.state.nm.us/ocd/ "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental

-----Original Message-----From: Horowitz, Ruth, NMENV Sent: Thursday, September 12, 2013 2:24 PM To: Chavez, Carl J, EMNRD Subject: FW: NRC#1059999

fyi

-----Original Message-----From: HQS-PF-fldr-NRC@uscg.mil [mailto:HQS-PF-fldr-NRC@uscg.mil] Sent: Thursday, September 12, 2013 2:20 PM To: Horowitz, Ruth, NMENV Subject: NRC#1059999

NATIONAL RESPONSE CENTER 1-800-424-8802 ***GOVERNMENT USE ONLY***GOVERNMENT USE ONLY*** Information released to a third party shall comply with any applicable federal and/or state Freedom of Information and Privacy Laws

## Incident Report # 1059999

## INCIDENT DESCRIPTION

*Report taken by: MST2 JOSHUA DIAZ at 16:14 on 12-SEP-13 Incident Type: MOBILE Incident Cause: NATURAL PHENOMENON Affected Area: EAGLE DRAW Incident occurred on 12-SEP-13 at 13:00 local incident time. Affected Medium: WATER EAGLE DRAW

REPORTING PARTY Name: MICHELE SCHULTZ Organization: NAVAJO REFINERY Address: 501 E. MAIN ST ARTESIA, NM

PRIMARY Phone: (575)7465281 Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTYName:MICHELE SCHULTZOrganization:NAVAJO REFINERYAddress:501 E. MAIN ST<br/>ARTESIA, NMPRIMARY Phone:(575)7465281

INCIDENT LOCATION 501 E. MAIN ST County: EDDY City: ARTESIA State: NM

RELEASED MATERIAL(S) CHRIS Code: OTH Official Material Name: OTHER OIL Also Known As: CARBON BLACK OIL Qty Released: 5 BARREL(S) Qty in Water: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT CALLER STATED THAT THEY ARE HAVING HEAVY RAINFALL AND A DRIVER RELEASED OIL INTO THE STORM WATER RUNOFF THAT IS USUALLY DRY.

SENSITIVE INFORMATION

INCIDENT DETAILS

Road Mile Marker: Length of Service Disruption: Airbag Deployed: UNKNOWN ---SHEEN INFORMATION---

Sheen Color: RAINBOW Sheen Odor Description: Sheen Travel Direction: Sheen Size Length: Sheen Size Width: ---WATER INFORMATION---Body of Water: EAGLE DRAW Tributary of: Nearest River Mile Marker: Water Supply Contaminated: UNKNOWN ---MOBILE INFORMATION---Vehicle Type: OTHER Vehicle Number: UNKNOWN Trailer/Tanker Number: Vehicle Fuel Capacity: Cargo Capacity: Cargo On Board: Hazmat Carrier: UNKNOWN Carrier Licensed: UNKNOWN Suspected Non Compliance: UNKNOWN

# IMPACT

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger: FATALITIES: NO Empl/Crew: Passenger: Occupant: EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: NO

Hours Direction of Closure Type Description of Closure Closed Closure N Air: N N Major Road: N Waterway: N Track:

Environmental Impact: UNKNOWN Media Interest: UNKNOWN Community Impact due to Material:

REMEDIAL ACTIONS DEPLOYED BOOM, WENT DOWNSTREAM TO PLACE MORE BOOM. Release Secured: UNKNOWN Release Rate: Estimated Release Duration: Weather: RAINY, °F

## ADDITIONAL AGENCIES NOTIFIED

Federal: State/Local: State/Local On Scene: State Agency Number:

NOTIFICATIONS BY NRC AZ STATE MINE INSPECTOR (COMMAND CENTER) 12-SEP-13 16:19 (602)5425971 DHS NOC (NOC) 12-SEP-13 16:19 (202)2828114 COLORADO INFO ANALYSIS CENTER (FUSION CENTER) 12-SEP-13 16:19 (720)8526705 DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE) 12-SEP-13 16:19 (202)3661863 U.S. EPA VI (MAIN OFFICE) (866)3727745 FEDERAL EMERGENCY MANAGEMENT AGENCY (MAIN OFFICE) 12-SEP-13 16:19 (800)6347084 INFO ANALYSIS AND INFRA PROTECTION (MAIN OFFICE) 12-SEP-13 16:19 NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE) 12-SEP-13 16:19 (202)2829201 NATIONAL INFRASTRUCTURE COORD CTR (INFRASTRUCTURE PROTECTION) 12-SEP-13 16:19 (202)2829201 NOAA RPTS FOR NM (MAIN OFFICE) 12-SEP-13 16:19 (206)5264911 NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS) 12-SEP-13 16:19 (202)2671136 NM HWB (MAIN OFFICE) 12-SEP-13 16:19 (505)4766025 TCEQ (MAIN OFFICE) 12-SEP-13 16:19 (512)2392507 **USCG DISTRICT 8 (MAIN OFFICE)** 12-SEP-13 16:19 (504)5896225

## ADDITIONAL INFORMATION

*** END INCIDENT REPORT #1059999 *** Report any problems by calling 1-800-424-8802 PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil

From:Schultz, MicheleSent:Tuesday, OctobeTo:Chavez, Carl J, ENCc:Holder, Mike; CoSubject:Initial C-141-T 81Attachments:2012-10-11 T-81

Schultz, Michele <Michele.Schultz@hollyfrontier.com> Tuesday, October 16, 2012 10:44 AM Chavez, Carl J, EMNRD Holder, Mike; Combs, Robert; Strange, Aaron Initial C-141-T 815 diesel release 101112 2012-10-11 T-815 Release 12 bbl diesel C141.pdf

Carl – Attached is the C-141 form for a diesel release that occurred at Tank 815 on 10/11/12. As this release occurred within a diked area that has a RCRA permit, we are awaiting instructions from NMED on acceptable methods to proceed with soil clean up.

Micki Schultz, P.E., CHMM Environmental Specialist, Water and Waste Programs Navajo Refining Company 575-746-5281 (office) 575-308-2141 (cell) <u>micki.schultz@hollyfrontier.com</u>

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Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

>

## Santa Fe, NM 87505 Release Notification and Corrective Action

	OPERATOR	X Initial Report	Final Report
Name of Company Navajo Refining Co. LLC	Contact Micki Schultz		
Address 501 E. Main St. Artesia, NM 88210	Telephone No. 575-746-5281		
Facility Name Navajo Refinery	Facility Type Petroleum Refir	nery	

Surface Owner	Mineral Owner	API No.						
LOCATION OF RELEASE								

Unit Letter S	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude___32°50'36.70"N__ Longitude_104°23'46.38"W_____

#### NATURE OF RELEASE

Type of Release Diesel release	Volume of Release <12 bbls	Volume R	ecovered 0 bbls
Source of Release Sampling valve left open	Date and Hour of Occurrence	Date and H	Iour of Discovery 10/11/12 @
	10/11/12 @ afternoon/evening	~ 8:30 pm	_
Was Immediate Notice Given?	If YES, To Whom?		
Yes No X Not required	d		
By Whom?	Date and Hour		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	itercourse.	
🗌 Yes X 🗌 No			
If a Watercourse was Impacted, Describe Fully.*			
Describe Cause of Problem and Remedial Action Taken.*			
A sample valve was left open during a prior sampling and was not imme	diately noticed because the tank liquid	level was bel	ow the sample port height.
When the tank level rose above sample port height, a release of diesel oc	curred. The subsequent sampler notice	ed stained soil	, closed the valve, and
reported.			
Describe Area Affected and Cleanup Action Taken.*			
Tank 815 inside dike, 20 ft x 30 ft stained soil, sheen on rainwater which	was removed with a vacuum truck.		
I hereby certify that the information given above is true and complete to	the best of my knowledge and underst	and that pursu	ant to NMOCD rules and
regulations all operators are required to report and/or file certain release	notifications and perform corrective ad	ctions for relea	ases which may endanger
public health or the environment. The acceptance of a C-141 report by the			
should their operations have failed to adequately investigate and remedia			
or the environment. In addition, NMOCD acceptance of a C-141 report	does not relieve the operator of respon	sibility for co	mpliance with any other
federal, state, or local laws and/or regulations.			
	OIL CONSER	<u>VATION I</u>	DIVISION
and the salut			
Signature: MUCKe OULL			
Defines d New Michiel Schulter	Approved by Environmental Speciali	st:	
Printed Name: Micki Schultz	······		· · · · · · · · · · · · · · · · · · ·
Title: Environmental Specialist	Approval Date:	Expiration D	ate.
The Divisional operation	rippioval Date.	Expiration E	
E-mail Address: micki.schultz@hollyfrontier.com	Conditions of Approval:		
	- Attached		Attached
Date: 10/16/2012 Phone: 757-746-5281			

* Attach Additional Sheets If Necessary

From: Sent: To: Cc: Subject: Attachments: Schultz, Michele < Michele.Schultz@hollyfrontier.com> Monday, September 24, 2012 3:53 PM Chavez, Carl J, EMNRD Holder, Mike; Combs, Robert; Strange, Aaron 09-22-12 Pitch spill 2012-09-22 C141.pdf

Carl – Attached is the initial C141 form for a pitch overflow that occurred at our rail loading facility over the weekend. If you have questions or require additional information regarding this event, please contact me. The final report will follow once we complete the disposal of the materials.

Micki Schultz, P.E., CHMM Environmental Specialist, Water and Waste Programs Navajo Refining Company 575-746-5281 (office) 575-308-2141 (cell) <u>micki.schultz@hollyfrontier.com</u>

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1

## State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	Santa Fe, IVVI 87505								
Release Notification and Corrective Action									
						OPERAT	OR	X In	itial Report 🔲 Final
Name of C	ompany N	lavajo Refini	ing Co. L	LC.		Contact Mi	cki Schultz		•
		St. Artesia,					No. 575-746-52	.81	
Facility Na							e Petroleum Re		
Surface Ov	vner			Mineral (	Owner		· · · · · · ·	API	No.
· · · · · · · · · · · · · · · · · · ·						N OF RE	E A SE	I	
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/West Line	e County
Olini Letter	Section	rownship	Kange	reet nom me		South Line	reet from the	East West Line	County
1	-J.,	Lat	itude		Lon	gitude 104 ^o	23'46.38''W	L	- I
						OF REL			
Type of Rele	ease Pitch S	Spill			~~~~		Release ~10 bbl	s Volum	e Recovered ~10 bbls
Source of Re	elease Valv	e leak after rai	il car was	loaded		-	lour of Occurrenc		d Hour of Discovery 9/22/1
							~ 6:00 pm	~ 6:10	
Was Immed	iate Notice (					If YES, To Whom?			
			Yes 🗌	No X 🗌 Not r	equired				
By Whom?						Date and H			
Was a Water	course Rea		Yes X	No		If YES, Volume Impacting the Watercourse.			
If a Waterco	urse was Im	pacted, Descr	ibe Fully	*			····· .		
In a materio		puotou, Deser	ioe r uny.						
		em and Reme							· · · · · · · · · · · · · · · · · · ·
							ar became full. Th	ie valve leaked a	nd continued to fill pitch into
railcar. It wa	s discovered	when the car	overflow	ed. The leaking vi	alve was	s blocked.			
Describe Are	A ffootod	and Cleanup A	Action Tel	·····				·····	· · · · · · · · · · · · · · · · · · ·
				cch set up quickly	when it	cooled to a se	olid A work autho	orization was ent	ered for clean up
	ing alou, 5 il	. X TO N. utong	, track. I h	ion set up quickly	when it		ond. At work adding		ered for crean up.
I hereby cert	ify that the i	information gi	ven above	e is true and comp	lete to th	he best of my	knowledge and u	nderstand that pu	irsuant to NMOCD rules and
regulations a	ll operators	are required to	o report a	nd/or file certain r	elease n	otifications a	id perform correc	tive actions for r	eleases which may endanger
									elieve the operator of liabilit
									ter, surface water, human he
		ddition, NMC ws and/or regu		otance of a C-141	report d	oes not reliev	e the operator of r	esponsibility for	compliance with any other
ieuerai, state		ws and/or regu	nations.		1		OIL CON	CEDUATIO	NDIVICION
	1			1			<u>UIL CONS</u>	SERVATIO	<u>N DIVISION</u>
Signature:	MUCI	<u>ei Scl</u>	ul	K					
						Approved by	Environmental S	a a a i a li a tu	

Printed Name: Micki Schultz		Approved by Environmental S	pecialist:
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: micki.schultz@holly	frontier.com	Conditions of Approval:	Attached 🔲
Date: 9/24/2012	Phone: 757-746-5281		

* Attach Additional Sheets If Necessary



SUSANA MARTINEZ Governor

JOHN A. SANCHEZ Lieutenant Governor

## NEW MEXICO ENVIRONMENT DEPARTMENT

# Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030 www.nmenv.state.nm.us



DAVE MARTIN Secretary

BUTCH TONGATE Deputy Secretary

JAMES H. DAVIS, Ph.D. Director Resource Protection Division

#### **CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

July 5, 2012

Mr. Robert Combs Navajo Refining Company P.O. Box 159 Artesia, New Mexico 88211-0159

## RE: REQUEST FOR CLARIFICATION OF MERCURY SOIL SCREENING LEVELS AND APPROVAL FOR SECOND EXTENSION REQUEST FOR MERCURY RELEASE REMEDY COMPLETION REPORT NAVAJO REFINING COMPANY, ARTESIA REFINERY EPA ID NO. NMD048918817 HWB-NRC-09-003

Dear Mr. Combs:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, Artesia Refinery's (the Permittee) *Request for Clarification of Mercury Soil Screening Levels and Second Request for Extension for Mercury Release Remedy Completion Report* extension request dated June 25, 2012. The stated reason for the request is due to the Permittee's request for clarification of the mercury soil screening level changes through time to properly evaluate the remedial actions completed to-date and to determine whether any of the soil remaining in place poses an unacceptable risk to potential receptors. The Permittee must communicate any concerns related to future submittal dates with NMED prior to the deadlines provided in NMED's response letters. NMED hereby approves the submittal extension for the Mercury Release Remedy Completion Report. The report must be submitted no later than **September 1, 2012**. R. Combs July 5, 2012 Page 2 of 2

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

lal-for

John E. Kieling Chief Hazardous Waste Bureau

cc:

D. Cobrain, NMED HWB L. Tsinnajinnie, NMED HWB C. Chavez, OCD J. Lackey, NRC P. Krueger, Arcadis K. Schnebele, Arcardis

File: Reading File and NRC 2012, HWB-NRC-09-003

From:	Schultz, Michele <michele.schultz@hollyfrontier.com></michele.schultz@hollyfrontier.com>
Sent:	Thursday, June 07, 2012 4:37 PM
То:	Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc:	Lackey, Johnny; Holder, Mike; Strange, Aaron; Combs, Robert
Subject:	C-141 initial report2012-06-03 sump overflow
Attachments:	3947_001.pdf

Please see the attached initial C-141 report for the sump overflow that occurred on 6/3/12.

If there are any questions, please contact me at 575-746-5281.

Micki Schultz, P.E., CHMM Environmental Specialist, Water and Waste Programs Navajo Refining Company 575-746-5281 (office) 575-308-2141 (cell) micki.schultz@hollyfrontier.com

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State of New Mexico Energy Minerals and Natural Resources

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

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

220 S. St. Fran	icis Dr., Sant	a Fe, NM 8750	5	S	anta Fe	e, NM 875	505		
			Rel	ease Notifi	catior	and Co	orrective A	ction	
						OPERA	TOR	🛛 Initi	al Report 🔲 Final Re
				ipany, L.L.C.		Contact	Micki Schultz		
		n St, Artesia	, NM 882	10		Telephone 1			· · · · · · · · · · · · · · · · · · ·
Facility Nar	me Artesia	a Refinery				Facility Typ	e Petroleum	Refinery	
Surface Ow	mer		· · · · · ·	Mineral	Owner			API No	).
				LOC	ΔΤΙΟΝ	N OF RE	FASE		, , , , , , , , , , , , , , , , , , ,
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				Latitude	<u> </u>	Longit	ude		
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ource of Re	lease Su	mp at Tank 8	34			Date and H 6/3/12 ~9:	Iour of Occurrent	e Date and 6/3/12 ~	Hour of Discovery
Vas Immedia	ate Notice (					If YES, To		0/3/12	
			] Yes [	] No 🛛 Not R	Lequired				
By Whom? Was a Watercourse Reached?						Date and I			
Vas a Water	course Read		]Yes 🗵	1 No		If YES, Vo	olume Impacting	the Watercourse.	
						·			
		pacted, Descr em and Reme							······································
					that a over	erflow had o	courred at the Tar	k 834 separation s	ump due to an automatic sum
								ontrol valve was re	
	A 66		A			•			
		and Cleanup			sel relea	ed: the volu	ne recovered will	be reported in the	final report
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final C-14	l report will	l be submitted	and will	include all applic	able anal	ytical reports	and associated d	isposal records.	
havely aget	fir that that		inon about	to the ord open	alata ta th	a hast of my	len ou d'adage and u	undoustand that nur	suant to NMOCD rules and
									eases which may endanger
ublic health	or the envir	ronment. The	acceptant	ce of a C-141 rep	ort by the	NMOCD m	arked as "Final R	eport" does not rel	ieve the operator of liability
									r, surface water, human health
		ddition, NMC		otance of a C-141	report do	bes not reliev	e the operator of	responsibility for c	ompliance with any other
derai, state,	, or rocar iai	vs and of reg				·····	OIL CON	SERVATION	DIVISION
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ignature:	Wir	Sch	ulp.						
rinted Name	e: Micki So	chultz	$\sim$	)	. 1	Approved by	Environmental S	pecialist:	
itle: En.	ironmental	Specialist				Annroual Da	· · ·	Expiration	Date
itle: Env	ironmental	specialist		· · · · · · · · · · · · · · · · · · ·		Approval Dat			
-mail Addre	ess micki.s	chultz@holly	frontier.co	om	(	Conditions of	f Approval:		Attached
ate: 6/7/	/12	Р	hone: 57	5-746-5281					
		ets If Necess							

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From:	Strange, Aaron <aaron.strange@hollyfrontier.com></aaron.strange@hollyfrontier.com>
Sent:	Monday, June 25, 2012 3:06 PM
То:	Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV
Cc:	Holder, Mike; Lackey, Johnny; Schultz, Michele; Combs, Robert
Subject:	C-141
Attachments:	2012-6-11 Fire P-454 Gas Oil Booster Pump.pdf

Leona, Carl, Randy and Dave,

Please see the attached final C-141 report for the small fire that occurred on 6/11/2012.

If there are any questions, please contact me at 575-746-5468.

Thanks, Aaron

#### Aaron Strange Environmental Technician, Senior

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

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

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

# **Release Notification and Corrective Action**

		OPERATOR	Initial Report	🛛 Final Report
Name of Company	Navajo Refining Co., L.L.C.	Contact	Aaron Strange	
Address	P.O. Box 159	Telephone No.	575-746-5468	
Facility Name	Artesia facility	Facility Type	Petroleum Refinery	

Surface		

Mineral Owner

API No.

## LOCATION OF RELEASE

Unit Letter S	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	-							

Latitude Longitude_

## NATURE OF RELEASE

Type of Release small fire	Volume of Release unknown	Volume Recovered N/A
Source of Release Pump P-454 Bearing Failure (on the motor)	Date and Hour of Occurrence	Date and Hour of Discovery
	~12:12 11 June, 2012	~12:12 11 June, 2012
Was Immediate Notice Given?	If YES, To Whom?	
🛛 Yes 🗌 No 🗍 Not Required	Emailed Carl Chavez, Leona Tsinn	ajinnie, and Randy Dade.
By Whom? Aaron Strange	Date and Hour ~13:29 11 June	
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.
🗌 Yes 🖾 No		
If a Watercourse was Impacted, Describe Fully.*		
N/A		
Describe Cause of Problem and Remedial Action Taken.*		
	the strength of fire De 12:20 and	anotions had anticomished the fire with a
At ~12:12 on June 11, 2012, the P-454 Gas Oil Booster Pump began smok		
handheld fire extinguisher. The bearing failed on the electric motor which	h leaked lube oil and caught on fire. P	-454 was blocked in after the fire was put
out.		
Describe Area Affected and Cleanup Action Taken.*		
Pump P-454 is located South of Tank T-433. The pump sits on a concrete		
were no injuries and other than the pump motor no equipment was damage	ed The fire was put out quickly with a	a hand held fire extinguisher.
I hereby certify that the information given above is true and complete to th	he best of my knowledge and understa	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release no	otifications and perform corrective ac	tions for releases which may endanger
public health or the environment. The acceptance of a C-141 report by the	NMOCD marked as "Final Report"	does not relieve the operator of liability
should their operations have failed to adequately investigate and remediate		
or the environment. In addition, NMOCD acceptance of a C-141 report do		
federal, state, or local laws and/or regulations.	,	
	OIL CONSERT	VATION DIVISION
	<u>OIL CONSERV</u>	VATION DIVISION
Signature Carron attrian a		
	Approved by Environmental Specialis	st:
Printed Name: Aaron Strange		
Title: Sr. Environmental Technician	Approval Date:	Expiration Date:
E-mail Address: Aaron.Strange@hollyfrontier.com	Conditions of Approval:	Attached
Date: 6/25/12 Phone: 575-748-3311		

* Attach Additional Sheets If Necessary

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Thursday, May 31, 2012 10:24 PM
То:	Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Horowitz, Ruth, NMENV; Cobrain, Dave,
	NMENV
Cc:	Lackey, Johnny; Holder, Mike; Strange, Aaron; Schultz, Michele
Subject:	C-141 initial report2012-05-24 Effluent pipeline leaks
Attachments:	C-141 2012-05-24 Effluent pipeline leakinitial report.pdf; Effluent Pipeline Spill
	Locations 052412.pdf

Please see the attached initial C-141 report for the treated waste water leaks that occurred on 5/24/12. Also attached is a GoogleEarth image indicating the approximate locations.

If there are any questions, please contact me at 575-746-5382.

Thanks, Robert

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Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

accordance with 19,15,29 NMAC.

4.

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Release Notification and Corrective Action								
		OPERATO	R	$\boxtimes$	Initial Report		Final Report	
Name of Company Navajo Refining Com	pany, L.L.C.	Contact Rol	pert Combs					
Address 501 E. Main St, Artesia, NM 882	10	Telephone No.	575-746-5382					
Facility Name Artesia Refinery		Facility Type	Petroleum Refin	ery				
Surface Owner	Mineral Owner	······································		A	PI No.			

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	L	L.	l	32° 50' 46.10"	N Longitu	ide 104° 20'	22.89" W	<u> </u>

Latitude <u>32° 47' 48.13" N</u> Longitude <u>104° 15' 50.50" W</u>

#### NATURE OF RELEASE

Type of Release	Treated Waste Water	Volume of Release ~350 bbl	Volume Recovered Unknown					
Source of Release	Effluent pipeline junction	Date and Hour of Occurrence	Date and Hour of Discovery					
		5/24/12 ~10:00	5/24/12 ~ 10:30					
Was Immediate Not	ice Given?	If YES, To Whom?						
	🛛 Yes 🗌 No 🗌 Not Required	OCD-Artesia (575-748-1283); left	t voicemail message for Randy Dade					
		OCD—Santa Fe (505-476-3490): spoke with Carl Chavez						
		NMED—Santa Fe (505-476-6000);	left voicemail message for Ruth Horowitz					
By Whom? Robe	ert Combs	Date and Hour 5/24/12 ~ 14:20						
Was a Watercourse		If YES, Volume Impacting the Wat	ercourse.					
	🗌 Yes 🖾 No							
If a Watercourse wa	If a Watercourse was Impacted, Describe Fully.*							

Describe Cause of Problem and Remedial Action Taken.*

At  $\sim$ 10:40 on 5/24/2012, the FCC Division Control Room notified Environmental that a leak had occurred along the treated waste water effluent pipeline to the injection wells. The operators noticed that the pipeline pressure indication dropped to 0 psig. The operators shut down the effluent pipeline pumps and a contract employee was dispatched to inspect the pipeline. It was discovered that the waste water fiberglass pipeline had separated in two locations (see approximate locations listed above). Once the locations were known, the spill was reported to the agencies listed.

Describe Area Affected and Cleanup Action Taken.*

Both leak locations were outside of Refinery property in unpopulated areas. Vacuum trucks were dispatched to recover the freestanding water released; the volume recovered has not yet been reported. At both spill locations, the pipeline separated at a threaded junction. The breaches were repaired and the pipeline was returned to service.

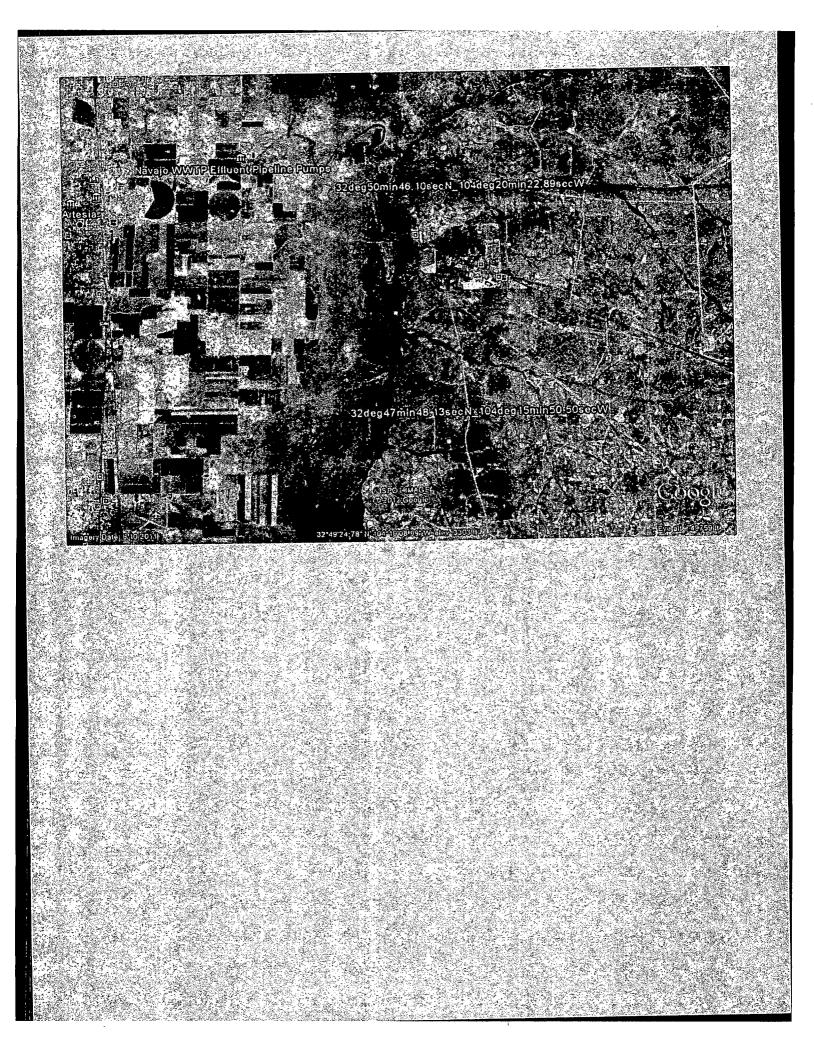
At this time, the holes where repairs were made remain open and barricaded, and no further cleanup activities have been pursued. Since the locations are outside of Refinery, the landowners are being contacted for access to be granted for spill cleanup.

A final C-141 report will be submitted and will include all analytical reports, photos, and any associated disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Allenth	<u>OIL CONSER</u>	VATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	

	E-mail Address: robert:combs@hollyfrontier.com	Conditions of Approval:	Attached
	Date: 5/31/12 Phone: 575-308-2718		
*	Attach Additional Sheets If Necessary	· · · · · · · · · · · · · · · · · · ·	



From:	Chavez, Carl J, EMNRD
Sent:	Thursday, May 24, 2012 12:06 PM
То:	Combs, Robert (Robert.Combs@hollyfrontier.com); Strange, Aaron
	(Aaron.Strange@hollyfrontier.com)
Cc:	VonGonten, Glenn, EMNRD
Subject:	Navajo Artesia Refinery (GW-028) Final C-141 Spill/Release Reports
Cc:	(Aaron.Strange@hollyfrontier.com) VonGonten, Glenn, EMNRD

Gentlemen:

FYI, the OCD is now logging spills/releases at refineries into its OCD Online system "Spills" (click here).

Also, the OCD notices that final C-141s should be forthcoming soon for the following spills:

- 1) Holly Energy Partners Artesia Receiving Manifold (Fire) 3/24/2012
- 2) Sulfur Guard Catalyst from Vacuum Bin (Fire) 4/3/2012
- 3) Tank 1227 (Fire) 4/29/2012

Please contact me if you have questions. Thank you.

xc: OCD Online "C-141s" thumbnail

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: <u>CarlJ.Chavez@State.NM.US</u>

Website: http://www.emnrd.state.nm.us/ocd/

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>

From:	Chavez, Carl J, EMNRD
Sent:	Thursday, May 24, 2012 2:29 PM
То:	CarlJ.Chavez@state.nm.us
Cc:	VonGonten, Glenn, EMNRD; Dade, Randy, EMNRD
Subject:	Navajo Artesia Refinery (GW-028) Effluent Line Release Notification to OCD ***********************************

FYI:

I received a call today at about 14:10 from Mr. Robert Combs related to a release along the effluent line to the 3 UIC Class I (NH) Disposal Wells (about 3 miles from the Pecos River or 3⁄4 mile west and upgradient from the Gaines Disposal Well. Mr. Combs indicated that a pressure drop was realized at about 10:00 today and the line was shut-in within 20 minutes. Since the flow rate was about 750 gpm over a 20 minute time-frame, the estimated volume of the release is about 350 bbls. of effluent from the refinery. A C-141 will be submitted next week.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: <u>CarlJ.Chavez@State.NM.US</u>

Website: <u>http://www.emnrd.state.nm.us/ocd/</u>

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From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, May 18, 2012 1:47 PM
То:	Strange, Aaron; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc:	Lackey, Johnny; Holder, Mike; Schultz, Michele
Subject:	RE: 5/11/2012 spill gas oil
Attachments:	C-141 2012-05-11 GO spill near T-110 initial report.pdf

Carl, Randy, Leona and Dave,

Please see the attached C-141 initial report for the gas oil spill reported on 5/11/12. A final C-141 will follow once all cleanup activities have been completed.

Please let me know if you have any questions.

Thanks, Robert

From: Strange, Aaron
Sent: Friday, May 11, 2012 5:09 PM
To: Chavez, Carl J, EMNRD; Randy Dade (randy.dade@state.nm.us); Tsinnajinnie, Leona, NMENV; Dave Cobrain (dave.cobrain@state.nm.us)
Cc: Envir
Subject: 5/11/2012 spill gas oil

Carl, Randy, Leona, and Dave,

Please see the email below. There was an ~10 barrel spill of gas oil on 5/11/12 at Navajo Refining Company in Artesia NM. Robert Combs will follow up with a C-141 next week.

#### Aaron Strange Environmental Technician, Senior Off: (575) 746-5468 Cell: (575) 703-5057

From: Latham, David
Sent: Friday, May 11, 2012 2:18 PM
To: Strange, Aaron
Cc: McKee, Michael; Boans, Robert; Spence, Richard (Trampas)
Subject: Gas Oil Leak inside T-110 dike

Gentlemen,

At approximately 1:30pm on 11 May 2012, the Blender Shift Foreman (Luis Gabaldon) and Asphalt Loader (James Mayo) noticed a pool of gas oil inside the T-110 dike when they went to the tank to block in the gas oil loading rack.

It appears approximately 10 barrels of gas oil is pooled inside the tank dike area. The gas oil appears to be coming from the underground portion of the transfer line when runs between T-110 and the fuel oil tanks.

The crew was instructed to blow out the line into the fuel oil tank and the isolate at both ends.

A vacuum truck is being dispatched to vacuum up the pooled gas oil.

We will create a WA to clean up the contaminated soil and excavate the line for repairs.

We do not need to transfer gas oil over the weekend, so work can begin next week.

David Latham Oil Movements The HollyFrontier Companies Navajo Refining Company, LLC 501 East Main Street Artesia NM 88210 575.746.5277

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# State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action												
		·····	OPERAT			🛛 Initia	al Report		Final Report			
Name of Co			Contact Robert Combs Telephone No. 575-746-5382									
									v			
				·		Facility Typ		icotinio				
Surface Owner Mineral Owner									API No		<u> </u>	j
						OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North/S	South Line	Feet from the	East/V	Vest Line	County		
		<u> </u>	4	Latitude		Longit	ude			· · · · · · · · · · · · · · · · · · ·		
				NAT	URE	OF REL						
Type of Release Source of Re		as Oil etion of pipin	a h atu ya an	tombo		Volume of Release         ~10 bbl         Volume Recovered         unknown           Date and Hour of Occurrence         Date and Hour of Discovery				wn		
Source of Ke	lease Se	cuon or pipin	g between	unks		05/11/12 -		e	05/11/12		covery	
Was Immedia	ate Notice (				······	If YES, To						
		X	Yes L	] No 🗌 Not R	equired	Carl Chave Randy Dag						
						Randy Dade, OCD Leona Tsinnajinnie, NMED						
Da Wham?	A						ain, NMED	. 11. 20	1.5			
By Whom? Was a Water		range, by ema	111			Date and Hour 17:09 May 11, 2012 If YES, Volume Impacting the Watercourse.						
			Yes 🛛	No			siane impacting (					
If a Watercou	irse was lm	pacted. Desci	ibe Fully.	*								
Describe Cause of Problem and Remedial Action Taken.* At ~14:30 on 5/11/2012, the Oil Movements Manager notified the Environmental Department that a gas oil spill was discovered in the area of T-110 due to a leaking pipe. It was estimated that approximately 10 barrels were released. The line was isolated, clamped, and returned to service. Further leaking has not been observed and the line is scheduled to be replaced. A work authorization was submitted to vacuum the free liquid and remove the contaminated soil.							r leaking has					
Describe Area Affected and Cleanup Action Taken.* A vacuum truck was dispatched to collect the remaining liquid, but the volume recovered was not recorded. The contaminated soil will be removed and disposed at an appropriate disposal facility. Excavation will be completed once access to the area is permitted; recent rain showers have prohibited further cleanup.												
A final C-141 and photos will follow with all other supporting documentation and incident details.												
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
OIL CONSERVATION DIVI						DIVISI	<u>ON</u>					
Signature: high when												
Printed Name: Robert Combs					Approved by Environmental Specialist:							
Title: Environmental Specialist						Approval Da	ite:		Expiration Date:			
E-mail Address: robert.combs@hollyfrontier.com						Conditions of Approval:						
Date: 5/18/2012 Phone: 575-308-2718												

* Attach Additional Sheets If Necessary

From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, May 04, 2012 9:28 AM
То:	Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc:	Strange, Aaron; Schultz, Michele; Lackey, Johnny; Holder, Mike
Subject:	C-141 04/29/12small fire on T-1227 insulation
Attachments:	C-141 fire on insulation at T-1227 042912.pdf

Carl, Randy, Leona and Dave,

Please see the attached C-141 regarding a small fire on T-1227 that occurred on 4/30/12. A final C-141 will follow when the investigation is complete.

Please feel free to contact me for any questions. Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Fiai	icis Dr., Sam	a re, inivi 8750	3	S	anta Fe	e, NM 875	505			
			Rel	ease Notifi	catio	n and Co	orrective A	ction	· · · · · · · · · · · · · · · · · · ·	
						<b>OPERA</b>	ΓOR	🔀 Initia	al Report 🔲 Final Report	
Name of Company Navajo Refining Co., L.L.C.						Contact		Robert Combs		
Address P.O. Box 159						Telephone No.		575-746-5382		
Facility Name Artesia facility						Facility Type Petroleum		Petroleum Refin	nery	
Surface Owner Mineral Owner								API No.		
LOCATIO							LEASE			
						South Line	Feet from the	East/West Line	County	
	1	J	La	titude	I	Longitud	l	I	l	
				NAT	URE	OF REL	EASE			
Type of Rele		l fire				Volume of	Release unkno		Recovered N/A	
Source of Re	lease					)	lour of Occurrence		Hour of Discovery	
Was Immedi	ate Notice (	Given?				~04:30	29 April, 2012	~4:30	29 April, 2012	
Wus minical			Yes 🗌	] No 🔲 Not R	equired		z, OCD; left mes	sage.		
By Whom?	Johnny La	ckev				Date and F		29 April, 2012		
Was a Water						If YES, Volume Impacting the Watercourse.				
			Yes 🛛	] No						
If a Watercou N/A	urse was lin	pacted, Descr	ibe Fully.*	k .		.1.,	· · · · · · · · · · · · · · · · · · ·			
At ~04:30 on fire team.	April 29, 2	-	s noticed a					vas sounded and the	e fire was extinguished by the	
Describe Are The fire team There were n	a Affected applied wa o injuries a	and Cleanup A ater from a nea s a result of th	Action Tak arby fire w is small fi	en.* vater monitor to e	·		· ,			
regulations a public health should their o or the environ	Il operators or the envir operations h nment. In a	are required to ronment. The ave failed to a	o report ar acceptanc dequately CD accep	id/or file certain r e of a C-141 repo investigate and r	elease no ort by the emediate	otifications and NMOCD in e contaminati	nd perform correct arked as "Final R on that pose a thr	etive actions for rele eport" does not reli eat to ground water	uant to NMOCD rules and cases which may endanger eve the operator of liability , surface water, human health ompliance with any other	
	11	0 1					OIL CON	SERVATION	DIVISION	
Signature:	[LAC	mpy								
Printed Name	e: Rob	ert Combs				Approved by Environmental Specialist:				
Title:	Env	vironmental Sp	pecialist		4	Approval Dat	e:	Expiration I	Date:	
E-mail Addre	ess: F	Robert.Combs	@hollyfro	ntier.com	•	Conditions of Approval:			Attached	
Date:	5/4/12	Phone:	575-74	6-5382						

* Attach Additional Sheets If Necessary

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From:	Combs, Robert <robert.combs@hollyfrontier.com></robert.combs@hollyfrontier.com>
Sent:	Friday, February 24, 2012 4:26 PM
То:	Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc:	Lackey, Johnny; VonGonten, Glenn, EMNRD; Strange, Aaron
Subject:	RE: 2012-02-23 Fire FCC Combined Feed Pump
Attachments:	C-141 Fire at P-927 23 Feb 2012.pdf

Please see the attached C-141; feel free to call me for any questions. Thanks, Robert

# **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, February 24, 2012 8:35 AM
To: Strange, Aaron; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Combs, Robert; Hammond, Estefani; VonGonten, Glenn, EMNRD
Subject: RE: 2012-02-23 Fire FCC Combined Feed Pump

Aaron:

I notice that for corrective action there was no damage to equipment listed; however, the combined feed pump flange leaked hydrocarbons that ignited. Could you please clarify whether there was any corrective action(s) to repair and/or replace the leaky pump flange on the combined feed pump?

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>) From: Strange, Aaron [mailto:Aaron.Strange@hollyfrontier.com]
Sent: Thursday, February 23, 2012 5:05 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Combs, Robert; Hammond, Estefani
Subject: 2012-02-23 Fire FCC Combined Feed Pump

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire today at ~13:00 in the FCC at P-927 Combined Feed pump. A flange at the pump leaked hydrocarbon which ignited. The fire was put out quickly with a steam hose. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks, Aaron

Aaron Strange

Environmental Technician, Senior Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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# State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Final Report

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

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

#### **Release Notification and Corrective Action OPERATOR** Initial Report

		•		F
Name of Company	Navajo Refining Co., L.L.C.	Contact	Robert Combs	
Address	P.O. Box 159	Telephone No.	575-746-5382	
Facility Name	Artesia facility	Facility Type	Petroleum Refinery	

Surface Owner

Mineral Owner

API No.

# LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	I		L	L	l		I	

Latitude Longitude_

#### NATURE OF RELEASE

Type of Release small fire	Volume of Release unknown	Volume Recovered N/A				
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery				
	~13:00 23 Feb., 2012	~13:00 23 Feb., 2012				
Was Immediate Notice Given?	If YES, To Whom?	· · · · · · · · · · · · · · · · · · ·				
Yes 🗌 No 🗌 Not Required						
	Dave Cobrain, NMED					
·	Carl Chavez, OCD					
	Randy Dade, OCD					
By Whom? Aaron Strange	Date and Hour via email, 17	2:05 23 Feb., 2012				
Was a Watercourse Reached?	If YES, Volume Impacting the Wa					
$\square$ Yes $\boxtimes$ No						
If a Watercourse was Impacted, Describe Fully.*						
N/A						
Describe Cause of Problem and Remedial Action Taken.*						
At ~13:00 on February 23, 2012, operators noticed a fire on P-927 (FCC	combined feed pump) while making re-	ounds. The operators immediately				
extinguished the fire with a steam hose. They discovered that a small va	lve ( 1/4 inch sample valve, petcock) wa	as leaking between a ³ / ₄ " inch block valve				
and a pressure gauge on the seal pot of P-927. The leak was stopped by	turning off the pump and closing the is	solation valve. The temperature of the				
hydrocarbon feed to the FCC at the local process is 450-500° F, which is	s above its flashpoint. When the liquid	dripped off of the leaking valve, it came in				
contact with a hot pipe flange and ignited.	r					
Describe Area Affected and Cleanup Action Taken.*						
The fire was extinguished with steam.						
There were no injuries as a result of this small fire.						
There were no equipment damages (electrical, mechanical, etc.) with the	exception of the piping insulation in the	he local area that will require replacement.				
	••••••••••••••••••••••••••••••••••••••	1				
I hereby certify that the information given above is true and complete to	the best of my knowledge and understa	and that pursuant to NMOCD rules and				
regulations all operators are required to report and/or file certain release	notifications and perform corrective ac	tions for releases which may endanger				
public health or the environment. The acceptance of a C-141 report by t	he NMOCD marked as "Final Report"	does not relieve the operator of liability				
should their operations have failed to adequately investigate and remedia	ate contamination that nose a threat to s	round water surface water human health				
or the environment. In addition, NMOCD acceptance of a C-141 report	does not relieve the operator of response	sibility for compliance with any other				
federal, state, or local laws and/or regulations.	does not reneve the operator of respon-	sionity for compliance with any other				
rederal, state, or local laws and/or regulations.	OUL CONCERN	VATION DIVICION				
	OIL CONSERV	VATION DIVISION				
Sin MAL IR						
Signature:						
Approved by Environmental Specialist:						
Printed Name: Robert Combs						
Title: Environmental Specialist	Approval Date:	Expiration Date:				
E-mail Address: Robert.Combs@hollyfrontier.com	Conditions of Approval:	Attached				

Date: * Attach Additional Sheets If Necessary

Phone:

2/24/12

575-746-5382

From: Sent:	Strange, Aaron [Aaron.Strange@hollyfrontier.com] Wednesday, April 11, 2012 5:02 PM
То:	Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc:	Lackey, Johnny; Combs, Robert; Schultz, Michele
Subject:	Initial C-141
Attachments:	Initiail C-141 Fire at vacuum bin on 2012-04-03 .pdf

Carl, Randy, Leona, and Dave,

Please see the attached initial C-141 for the fire that occurred on 4-3-2012.

If you have any questions, please feel free to contact Robert Combs or myself.

Thanks, Aaron

Aaron Strange Environmental Technician, Senior

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 8, 2011

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

Attached 📋

				······	_	i.c.						
			Kel	ease Notifi	catio			ction	l			
<u>-</u>						<b>OPERA</b>	TOR			al Report		Final Report
Name of Co	ompany			g Co., L.L.C.		Contact	· · · · · · · · · · · · · · · · · · ·		t Combs			
Address			Box 159			Telephone			46-5382			
Facility Nat	me	Artesi	a facility			Facility Typ	pe	Petrol	eum Refi	nery		
Surface Ow	/ner			Mineral (	Dwner				API No	).		<u></u>
			······································	·····		NOFDE			_h.,	~~~~~		
Unit Letter	Section	Township	Range	Feet from the		N OF RE	Feet from the	East/W	Vest Line	County		·····
Onit Letter	Section	Township	Kange	r cor ironi uic		n/South Line	Teet nom the	Lasu	rest Line	County		
		<u> </u>						<u> </u>		<u> </u>		
			La	titude		Longitud	le					
					TIRE	E OF REL						
Type of Rele	ase smal	l fire				Volume of		wn	Volume I	Recovered N	√A	
			g used to	collect spent sulfu	r guard		Hour of Occurrent			Hour of Disco		
catalyst			-	•	<u> </u>	~10:30	April 03, 2012		~10:30	April 03, 2		
Was Immedi	ate Notice					If YES, To						
		$\boxtimes$	Yes [	] No 🗌 Not R	equired		nnajinnie, NMED	•				
							rain, NMED					
						Carl Chav						
By Whom?	Robert Co	unhs				Randy Da Date and I		ail, 16:	18 4	ril 3, 2012		
Was a Water							olume Impacting			111 5, 2012		
	••••••		Yes 🗵	No				ine state		,		
If a Watercou	irse was Im	pacted, Descr	ibe Fully	*	· · · ·				<u></u>			
N/A		· · · ·										
		em and Reme										
				mall fire at a vacu								
		seconds of disc	covery. N	avajo is conductii	ng a roo	ot cause invest	igation. We will f	follow up	o with a fin	al C-141 repo	rt ond	e the
investigation	is filed.											
Describe Are	a Affected	and Cleanup A	Action Tal	(en.*								· · · · · · · · · · · · · · · · · · ·
				e east side of the i	Naphth	a Hydrotreater	(Unit 13). There	was a sn	nall amoun	t of catalyst tha	at spil	led to the
				e spilled catalyst v								
did damage tl	he back doo	or of the vacu	ım bin bu	no one was injur	ed.							
l harabu aarti	fu that the	information a	von abou	e is true and comp	loto to	the best of my	knowladge and i	nderstar	d that pure	want to NMO	<u></u>	les and
				nd/or file certain r								
				ce of a C-141 repo								
should their c	operations h	ave failed to a	dequately	investigate and r	emedia	ite contaminat	on that pose a thr	reat to gr	ound water	, surface wate	r, hui	nan health
				otance of a C-141								
federal, state,	or local la	ws and/or regu	lations.							- 		
	_	-					OIL CON	<u>SERV</u>	ATION	DIVISION	1	
c:	In-	- L		_	-							
Signature:	on	///	22									
Printed Name	e: Aar	on Strange				Approved by	Environmental S	pecialist	:			
						•	•					
Title:	Sr.	Environmenta	l Technic	ian	]	Approval Da	te:	I	Expiration	Date:		

Conditions of Approval:

Date: 11 April, 2012 Phone: 575-746-5468 * Attach Additional Sheets If Necessary

Aaron.Strange@hollyfrontier.com

E-mail Address:

From:	Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent:	Tuesday, April 03, 2012 4:18 PM
То:	Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc:	Lackey, Johnny; Strange, Aaron; Schultz, Michele
Subject:	2012-04-03 Fire at sulfur guard at Unit 13Naphtha hydrotreater

Carl, Randy, Leona, and Dave,

At approximately 10:30 on 4/3/12, there was a small fire at a vacuum bin used to collect the used sulfur guard catalyst. This was a very brief fire, extinguished within 30 seconds of discovery and there were no injuries and only minor equipment damage. There were no liquids released during the event.

A C-141 report will follow.

If you have any questions, please feel free to contact Aaron Strange or myself.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 <u>Robert.Combs@hollyfrontier.com</u>

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From: Sent: To: Cc: Subject: Chavez, Carl J, EMNRD Tuesday, March 27, 2012 9:14 AM 'Combs, Robert' Tsinnajinnie, Leona, NMENV RE: C-141 2012-03-26 spill at HEP Artesia Manifold

Robert:

Initial C-141 Received. Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Monday, March 26, 2012 2:21 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Lackey, Johnny; Strange, Aaron; Schultz, Michele
Subject: C-141 2012-03-26 spill at HEP Artesia Manifold

Carl and Leona, Please see the attached C-141 initial report for the HEP release within the Artesia Refinery. If you have any questions, please contact myself or Lori Copeland at 214-208-1260. Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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# State of New Mexico **Energy Minerals and Natural Resources**

Form C-141 Revised August 8, 2011

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

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

Volume Recovered 0 bbl

and Hour of Discovery

# **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Navajo Refining Company, L.L.C.	Contact Robert Combs		
Address 501 E. Main St, Artesia, NM 88210	Telephone No. 575-746-5382		
Facility Name Artesia Refinery	Facility Type Petroleum Refin	nery	

Surface Owner	Mineral Owner	API No.

]	LO	CA	TI	ON	OF	RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

NATURE OF RELEASE

Latitude Longitude

Volume of Release <25 bbl

Source of Release Holly 1	Energy Partners Artesia Receiving Manifold	Date and Hour of Occurrence 03/24/12	Date and Hour of 03/26/12 ~08:30
Was Immediate Notice Give	n?	If YES, To Whom?	
	🗌 Yes 🔲 No 🛛 Not Required		

By Whom?	Date and Hour
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.
🗋 Yes 🛛 No	

If a Watercourse was Impacted, Describe Fully.*

Kerosene

Type of Release

Describe Cause of Problem and Remedial Action Taken.*

At ~11:30 on 03/26/2012, the Holly Energy Partners Environmental office notified Navajo Environmental that they had a release of approximately 20 bbl of kerosene at their Artesia Manifold. This manifold is located within the Navajo Artesia Refinery, but is an HEP asset. The release was caused by a bleed valve (probably 34" valve) that was left in the open position. The bleed valve was closed to prevent further releases. The impacted area was approximately 20 feet by 50 feet.

Describe Area Affected and Cleanup Action Taken.*

By the time the release was discovered, the liquid had been absorbed into the ground; there was no liquid present to recover. The stained area will be excavated and sampled by a third party.

A final C-141, analytical results, and photos will follow with all other supporting documentation and incident details.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. 

Signature: Norther	<u>OIL CONSERVATION DIVISION</u>					
Printed Name: Robert Combs	Approved by Environmental Specialist:					
Title: Environmental Specialist	Approval Date:	Expiration Date:				
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached				
Date: 03/26/2012 Phone: 575-308-2718						

* Attach Additional Sheets If Necessary

#### INITIAL INCIDENT REPORTING FORM - HOLLY ENERGY PARTNERS CONTROL CENTER

Type of incident (fire, explosion, release, safe	ty,etc)	
Name of Facility/Pipeline/Station:		RELEASE       ARTESIA REC MANIFOLD
Contact Name of Reporting Party:		KEVIN KENNEDY
Contact telephone # of Reporting Party:		575-703-8900
Date & Time of Incident:		3/26/2012
Was a Contractor involved in this Incident? yes, insert name of Contractor	lf	NO
Location of discharge/incident (valve, sump,	etc):	BLOCK AND BLEED ON VALVE #20
Type of Product (dlesel, gas, crude etc):		KERO
Cause of incident (material failure, fire, explo damage, corrosion, personnel error, etc):	sion, excavation	BLOCK AND BLEED ON VALVE #20
Were there any injuries? Yes or No		NO
Estimated volume of discharge if applicable:	Gallons: Barrels:	approximately 20
Weather conditions on scene:		CLEAR
GPS Coordinates:	Longitude: Latitude:	
Person completing this report & date:	Name: Date:	JOE CARLO 3/26/2012
Additional comments/information:		This release was due to a valve left open during pipeline receipt. Due to this valve being downstream of the meter where the delivery is made into refinery tankage, this is not a regulated portion of the pipeline therefore no reporting will be made at this time.
		HEP will be responsible for the cleanup.
		<u> </u>

Notification Procedure (must be done within 30 minutes from the time of notification):

1

Once form has been completed please email to the attention of the Manager of Regulatory Compliance (Lori Coupland) and contact her via phone at (214)208-1260. If unable to contact Lori, please notify Nora Vazquez @ (972)835-9738.

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From: Sent: To: Cc: Subject: Strange, Aaron [Aaron.Strange@hollyfrontier.com] Thursday, February 23, 2012 5:05 PM Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD Lackey, Johnny; Combs, Robert; Hammond, Estefani 2012-02-23 Fire FCC Combined Feed Pump

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire today at ~13:00 in the FCC at P-927 Combined Feed pump. A flange at the pump leaked hydrocarbon which ignited. The fire was put out quickly with a steam hose. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks, Aaron

# Aaron Strange Environmental Technician, Senior

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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From: Sent: To: Subject: Combs, Robert [Robert.Combs@hollyfrontier.com] Wednesday, February 08, 2012 5:36 PM Chavez, Carl J, EMNRD RE: T-401/T-1215 Spill Cleanup

#### Carl,

Thanks so much for your help with this. I will start sending you our documentation ASAP so we can work to close these incidents. Thanks again, Robert

### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 <u>Robert.Combs@hollyfrontier.com</u>

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us] Sent: Wednesday, February 08, 2012 9:41 AM To: Combs, Robert Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

You should have the OCD's path forward on the releases.

Only the OCD is involved with the Lea Refinery (Tk-1215), while the NMED should be involved with the OCD on the Artesia Refinery (Tk-401) release.

Please contact me to discuss. Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Friday, February 03, 2012 3:05 PM
To: Chavez, Carl J, EMNRD
Subject: RE: T-401/T-1215 Spill Cleanup

Carl, Thanks for the feedback; I look forward to your response. Thanks, Robert

# **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, February 03, 2012 12:24 PM
To: Combs, Robert
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

I'm trying to get to this after returning to the office from sick leave. I will follow-up with you next week on Tuesday and/or Wednesday.

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Wednesday, February 01, 2012 5:21 PM
To: Chavez, Carl J, EMNRD
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Carl,

Have you had a chance to look for any communications with Darrell regarding clean-up activities around these tanks? We are nearing the end of the maintenance activities and I would like to make sure that we have followed your recommendations.

Thanks,

#### Robert

Robert Combs Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, January 24, 2012 9:51 AM
To: Combs, Robert
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

Good morning. The releases are filed on OCD Online for the refineries (see below):

Lea Refinery (GW-014): C-141 Files

Artesia Refinery (GW-028): <u>C-141 Files</u>

I will follow-up by forwarding e-mails that I have in my mail folder for the above spills. Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/</u>environmental.htm#environmental)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Monday, January 23, 2012 4:54 PM
To: Chavez, Carl J, EMNRD
Cc: Lackey, Johnny
Subject: T-401/T-1215 Spill Cleanup

Carl,

As I'm sure you've seen Johnny's previous message about Darrell, his absence leaves several details for us to sort out. Would you mind helping me get up to speed on the cleanup requirements for the T-401 (Artesia) and T-1215 (Lovington) spills?

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If you don't mind, I will probably be coming to you with questions as they arise.

Thanks, Robert

# **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From: Sent:	Combs, Robert [Robert.Combs@hollyfrontier.com] Tuesday, January 31, 2012 6:05 PM
To:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Horowitz, Ruth, NMENV; Dade, Randy, EMNRD
Cc:	Lackey, Johnny; Strange, Aaron
Subject:	C-141 SpillFCC scrubber water 2011-01-31
Attachments:	Initial C-141 FCC scrubber spill 31 Jan 2012.pdf

Carl, Dave, Ruth, and Randy,

Please see the attached initial C-141 for a spill that occurred this morning in the vicinity of our WWTP. A Final C-141 will follow and will include sample analyses and photos.

If there are any questions, please contact me at 575-746-5382.

Thanks, Robert

### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 8, 2011 py to appropriate District Office in

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

Release Notification and Corrective Action												
						<b>OPERATOR</b> Initial Report 🗍 Fin					Final Report	
				pany, L.L.C.		Contact Robert Combs						
	Address 501 E. Main St, Artesia, NM 88210						No. 575-746-5					
Facility Nar	ne Artesia	a Refinery				Facility Typ	e Petroleum	Refine	ry			
Surface Ow	ner			Mineral C	Wner				API No	).		
				LOCA	TIO	N OF RE	LEASE					
Unit Letter	Section	Township	Range	Feet from the		n/South Line	Feet from the	East/V	Vest Line	County		
								<u> </u>				
				Latitude		Longi						
				NAT	URE	OF REL						
Type of Rele		CC Scrubber v				Volume of				Recovered	15 bt	
Source of Re		fluent pipeline	junction			01/31/12 -		e	01/31/12	Hour of Di ~03:00	scovery	
Was Immedia	ate Notice C		Yes 🗌	] No 🛛 Not Re	equired							
By Whom?					. ,	Date and H						
Was a Watercourse Reached?					If YES, Volume Impacting the Watercourse.							
	se of Proble 01/31/2012	em and Reme 2, the FCC Di	dial Action vision Cor	n Taken.* htrol Room notifie			Department that	a hose e	onnection l	nad failed o	n a tran	sfer pump
and released	an estimated	d 15-20 bbl of	water fro	m the FCC flue ga	as scrul	bber.						
Describe Are				en.* vent a recurrence.	Vacu	um trucks wer	e dispatched to th	ne area to	o recover th	e remainin	g liquid	. The wet
				n appropriate disp			•			·	0	
A final C-141	, analytical	results, and p	hotos will	follow with all o	ther su	pporting docu	mentation and inc	ident de	tails.			
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
ndl					OIL CONSERVATION DIVISION							
Signature:	Signature: Multurely				:							
Printed Name	: Robert C	Combs				Approved by	Environmental S	pecialist	:			
Title: Envi	ronmental	Specialist				Approval Dat	e:		Expiration	Date:		
E-mail Addre	ss: robert	.combs@holly	/frontier.c	om		Conditions of Approval:			Attached			
	31/2012		Phone:	575-308-2718							_	
Attach Addit	ional Shee	ets If Necess	ary									

From:	Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent:	Wednesday, December 14, 2011 8:47 AM
To:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV
Cc:	Moore, Darrell; Lackey, Johnny; Combs, Robert
Subject:	C-141 Final - Flash fire at the SRU-2
Attachments:	C-141-fire at SRU-2.pdf

Carl, Randy, Dave, and Leona,

Please see the attached C-141 for flash fire at the SRU-2.

Please let me know if you have any questions regarding these events.

Thanks, Aaron

# Aaron Strange Environmental Technician, Senior

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised August 8, 2011

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

Name of Company       Navajo Refining Co.       Contact       Aaron Strange         Address       P.O. Box 159       Telephone No.       575-746-53468         Facility Name       Artesia facility       Facility Type       Petroleum Refinery         Surface Owner.       Mineral Owner       API No.         LOCATION OF RELEASE       Init Letter       Section       Township       Range       Feet from the       Not/Volume       API No.         Lottude       Locast       Longitude       County       Locast       County         Latitude       Longitude       Not/Volume of Release       Not/Not/South Line       Feet from the       East/West Line       County         Source of Release       flash fire       Volume of Release       No       Not Required       Carl Chavez, COD (called, however the voicemail would not work)       Geoffrey Leking, OD         Was Immediate Notice Given?       If YES, To Whom?       Estefani Hammond       Date and Hour       12 Dec., 2011       I6:08 11 Dec., 2011         Was a Watercourse was Impacted, Describe Fully.*       No       Not Required       Carl Chave, COD (called, however the voicemail would not work)         Goffrey Leking, OD       Date and Hour       12 Dec., 2011 Morning       If YES, Volume Impacting the Watercourse.       If YES, Volume Impacting the wave anashife off of									
Name of Company       Navajo Refining Co.       Contact       Aaron Strange         Address       P.O. Box 159       Telephone No.       575-746-53468         Facility Name       Artesia facility       Facility Type       Petroleum Refinery         Surface Owner       Mineral Owner       API No.         LocCATION OF RELEASE       Init Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude       Longitude	I220 S. St. Francis Dr., Santa Fe, NM 87505       Santa Fe, NM 87505         Release Notification and Corrective Action								
Address       P.O. Box 159       Telephone No.       \$75-746-53468         Facility Name       Artesia facility       Facility Type       Petroleum Refinery         Surface Owner.       Mineral Owner       API No.         LOCATION OF RELEASE       LOCATION OF RELEASE       County         Unit Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude       Longitude	<b>OPERATOR</b> Initial Report X Final Report								
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Surface Owner.       Mineral Owner       API No.         Location Of Release       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude       Longitude									
LOCATION OF RELEASE           Unit Letter         Section         Township         Range         Feet from the         North/South Line         Feet from the         East/West Line         County           Latitude									
Unit Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude									
Unit Letter       Section       Township       Range       Feet from the       North/South Line       Feet from the       East/West Line       County         Latitude									
NATURE OF RELEASE         Type of Release       flash fire       Volume of Release       unknown       Volume Recovered       N/A         Source of Release       sour water knock out drum (D-297)       Date and Hour of Occurrence       Date and Hour of Discovery       16:08 11 Dec., 2011       16:08 11 Dec., 2011         Was Immediate Notice Given?       If YES, To Whom?       If YES, To Whom?       Carl Chavez, OCD (called, however the voicemail would not work)         By Whom?       Estefani Hammond       Date and Hour       12 Dec., 2011 Morning         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.       If YES, Volume Impacting the Watercourse.         If a Watercourse was Impacted, Describe Fully.*       V/A       V/A       Describe Cause of Problem and Remedial Action Taken.*         At ~16:08 on 11 December, 2011, there was a flash fire off of the sour water knock out drum (D-297) in the SRU-2 (Unit 30). The line between from D-2-298 was plugged. Operations first suspected it was a bad valve, so they removed the valve. The flash of fire was very short and was consumed as it escaped the equipment. The flash fire burned itself our before any fire suppression equipment could be used.         Describe Area Affected and Cleanup Action Taken.*       There area affected was the SRU-2 (Unit 33). The flash of fire was very short and was consumed as it escaped the equipment. The flash of fire was very short and was consumed as it escaped the equipment. No cleanup was needed. There were no injuries or equipment damage associated with this event.<									
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Intervention       Interventin       Interventin       I									
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Geoffrey Leking , OCD         By Whom?       Estefani Hammond       Date and Hour       12 Dec., 2011 Morning         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         f a Watercourse was Impacted, Describe Fully.*       V/A.         Describe Cause of Problem and Remedial Action Taken.*       At ~16:08 on 11 December, 2011, there was a flash fire off of the sour water knock out drum (D-297) in the SRU-2 (Unit 30). The line between from D-2-288 was plugged. Operations first suspected it was a bad valve, so they removed the valve but it was not the problem. They then hooked up steam to drum to clear the line. The plug in the line let loose and a fire flashed from where they had removed the valve. The flash of fire was very short and was consumed as it escaped the equipment. The flash fire burned itself out before any fire suppression equipment could be used.         Describe Area Affected and Cleanup Action Taken.*         The area affected was the SRU-2 (Unit 33). The flash of fire was very short and was consumed as it escaped the equipment. There was no hydrocarbic ame in contact with the ground. No cleanup was needed. There were no injuries or equipment damage associated with this event.         hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules a regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endang oublic health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relicve the operator of liabil thould their operations have failed to adequately investigate and remediate contamination									
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Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         f a Watercourse was Impacted, Describe Fully.*       ///         V/A.       Describe Cause of Problem and Remedial Action Taken.*         At ~16:08 on 11 December, 2011, there was a flash fire off of the sour water knock out drum (D-297) in the SRU-2 (Unit 30). The line between from D-298 was plugged. Operations first suspected it was a bad valve, so they removed the valve but it was not the problem. They then hooked up steam t drum to clear the line. The plug in the line let loose and a fire flashed from where they had removed the valve. The flash of fire was very short and was consumed as it escaped the equipment. The flash fire burned itself out before any fire suppression equipment could be used.         Describe Area Affected and Cleanup Action Taken.*         The area affected was the SRU-2 (Unit 33). The flash of fire was very short and was consumed as it escaped the equipment. There was no hydrocarburame in contact with the ground. No cleanup was needed. There were no injuries or equipment damage associated with this event.         hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules a egulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endang public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liabil hould their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human head final teoperations have failed to adequately investigate and remediate contamination that pose a threat									
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OIL CONSERVATION DIVISION	OIL CONSERVATION DIVISION								
Signature: Ann-Strange									
Printed Name: Aaron Strange Approved by Environmental Specialist:									
Sr. Environmental Technician         Approval Date:         Expiration Date:									
E-mail Address: Aaron.Strange@hollyfrontier.com Conditions of Approval: Attached									
Date: 14 December, 2011 Phone: 575-746-5468									

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From: Sent: To:	Combs, Robert [Robert.Combs@hollyfrontier.com] Monday, December 12, 2011 4:56 PM Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie,
-	Leona, NMENV
Cc:	Moore, Darrell; Lackey, Johnny; Strange, Aaron
Subject:	C-141 Final ReportsFire at North Bundle Pad and Fire at P-2105 Crude Bottoms Pump
Attachments:	C-141 FinalFire at P-2105 crude bottoms pump.pdf; C-141 FinalFire at north bundle pad 07 Dec 2011.pdf

Carl, Randy, Dave, and Leona,

Please see the attached C-141s for the events:

- Fire at the North Bundle Pad
- Fire at P-2105 Crude Bottoms Pump

Please let me know if you have any questions regarding these events.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised August 8, 2011

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

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1220 S. St. Frai	ncis Dr., Sant	a Fc, NM 8750	5			e, NM 875						
			Rele				orrective A	ction			<u></u>	
			1.010		cation			, cuon		Donort	🛛 🛛 Final Repo	
				OPERATORInitial ReportFinalContactRobert Combs								
Address	Jinpuny		P.O. Box			Telephone I		75-746-				
Facility Na	me	4	Artesia fa	cility		Facility Typ		Petroleu	m Refiner	у		
Surface Ow	mer			Mineral (	Owner				API No	•		
						N OF RE	FASE		-			
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/V	Vest Line	County		
	L	L	La	titude	1	Longitud	le	-L		L		
						OF REL						
Type of Rele	ase	smal	l fire		UNE		Release unkno	wn	Volume F	Recovered	N/A	
Source of Re		P-21	05 Crude b	oottoms pump	·····	Date and H	lour of Occurrence		Date and	Hour of Dis	scovery	
Was Immedi	ata Natice (	Tiven?			······	08:00 6 D			08:10 61	Dec., 2011		
waş minedi			Yes 🗌	No 🗌 Not R	cquired		inajinnie, NMED	I.				
				_	•	Dave Cobr	ain, NMED					
						Carl Chavez, OCD Randy Dade, OCD						
By Whom?		Aa	ron Strang	e		Date and Hour via email, 11:00 6 Dec., 2011						
Was a Watercourse Reached?						If YES, Volume Impacting the Watercourse.						
		L	Yes 🛛	No								
If a Watercon N/A.	urse was Im	pacted, Descr	ibe Fully.*	\$					*****			
		em and Reme										
							ms pumps, P-210 0 pound fire extin			ickly notified	I their supervisors	
	-		-					-				
The operator:	s quickly rec	cognized the c	ause of the	e event as a seal i	tailure, lil	kely due to the	e unit upset (char	ge heate	r H-20 trip)			
				ociated with this e	event.							
		and Cleanup /			it escar	ed the equipr	nent Therewası	no hydro	carbon tha	t came in co	ntact with the	
The leak that caused the fire was very small and was consumed as it escaped the equipment. There was no hydrocarbon that came in contact with the ground.												
hereby certi	fy that the i	nformation gi	iven above	is true and comp	lete to th	ne best of my	knowledge and u	inderstan	id that purs	uant to NM	OCD rules and	
							nd perform correct arked as "Final R					
											iter, human health	
				tance of a C-141	report de	oes not reliev	e the operator of	responsi	bility for co	ompliance v	with any other	
federal, state, or local laws and/or regulations.					OUL CONSERVATION DIVISION							
				OIL CONSERVATION DIVISION								
Signature:		hull										
Printed Name	e:	Robert Con	nbs			Approved by Environmental Specialist:						
Title:		Environment	al Speciali	st		Approval Dat	e:	E	Expiration	Date:		
E-mail Addre	ess: <u>rober</u>	t.combs@hol	lyfrontier.c	com		Conditions of Approval: Attached						
Data	12 Decemb			746 5297								
Date: 12 December, 2011 Phone: 575-746-5382												

* Attach Additional Sheets If Necessary

# State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. E. 

Form C-141 Revised August 8, 2011

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

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District IV       1220 South St. Francis Dr.         1220 S. St. Francis Dr., Santa Fe, NM 87505       Santa Fe, NM 87505												
Release Notification and Corrective Action												
					cutioi	OPERAT		Г	] Initi	al Report	$\bowtie$	Final Report
Name of Co	mpany	1	Navaio Re	efining Co.		Contact		obert Cor				
Address			P.O. Box			Telephone N		75-746-53				
Facility Nar	ne		Artesia fa	cility		Facility Typ	e P	etroleum	Refiner	ry		
Surface Ow	mer		·	Mineral	Owner				API No	).		······
						N OF REI	FASE					
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/We	st Line	County		
		·	La	titude		Longitud	e	·		l		
				NAT	FURE	OF RELI	EASE					
Type of Rele		smal				Volume of	Release unknow			Recovered	N//	4
Source of Re	lease	North	n bundle p	ad		Date and H 10:05 7 De	our of Occurrenc	1		Hour of Dis Dec., 2011	covery	
Was Immediate Notice Given? 🛛 Yes 🗌 No 🗌 Not Required					lequired	If YES, To Whom?						
By Whom? Robert Combs Date and Hour via email, 11:40 8 Dec., 2011												
Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         If YES, Volume Impacting the Watercourse.												
If a Watercou N/A.	urse was Im	pacted, Descr	ibe Fully.'	k		<u> </u>						
N/A. Describe Cause of Problem and Remedial Action Taken.* At ~10:00 on 7 December, 2011, an operator noticed black smoke coming from the north bundle pad area. He immediately used a 30 pound fire extinguisher to put out the fire. It is suspected that a high velocity gas release from the North Plant caused liquid to be carried out of the flare and drop to grade igniting a fire on the bundle pad. It is difficult to determine the exact source of the emission due to the number of unit upsets during that time period.												
There were n	o injuries or	r equipment da	image ass	ociated with this	event.							
Describe Area Affected and Cleanup Action Taken.* The liquid that ignited the fire fell on a contained area, no further action was required after the fire was extinguished.												
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
$\Lambda \Lambda a$							OIL CON	<u>SERVA</u>	TION	DIVISIC	<u>)N</u>	
Signature:	Signature: Which											
Printed Name	8:	Robert Con	nbs			Approved by Environmental Specialist:						
Title:		Environment	al Special	ist		Approval Dat	e:	Expiration Date:				
E-mail Addre	ess: <u>rober</u>	t.combs@holl	lyfrontier.	com	(	Conditions of Approval: Attached						
Date: 12 December, 2011 Phone: 575-746-5382												

* Attach Additional Sheets If Necessary

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From: Sent: To: Subject: Leking, Geoffrey R, EMNRD Monday, December 12, 2011 7:38 AM Chavez, Carl J, EMNRD Navajo

Carl

Navajo, Lovington experienced a wastewater leak this weekend per a phone message left by Stephanie Hammond. Apparently she tried to leave you a message, but stated that your voice mail was turned off? She tried to leave an initial message here, but was using Larry Johnson's old extension. She finally left it with Patricia's voice mail at the front desk. I called her this morning to indicate we had received her notification. She estimated that 15 barrels of wastewater was released and a vac truck was called and picked up most of the release.

She also stated that there had been a flash fire at the Artesia refinery and will call Dist. 2 and you on this.

Geoff

From:	Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent:	Monday, December 05, 2011 8:18 AM
То:	Kim Flowers; Chavez, Carl J, EMNRD
Cc:	Moore, Darrell; Rhodes, Glen; Strange, Aaron; Dave Small
Subject:	Request for waste disposal
Attachments:	Profile form and C-138 fire water line N of Maint.pdf

Kim,

Please see the attached profile form, C-138 and analytical results for excavated soil generated from a fire water line installation. Please let us know via email if this waste is approved for disposal. Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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# CERTIFICATE OF WASTE STATUS NON-EXEMPT WASTE MATERIAL

COMPANY/GENERATOR:	Navajo Refining Co.
ADDRESS:	501 E. Main St.
GENERATING SITE:	Artesia facility
COUNTY	Eddy
STATE	NM
TYPE OF WASTE:	Soil
ESTIMATED VOLUME:	
GENERATING PROCESS:	Excavated soil from fire water line installation
· · · · · · · · · · · · · · · · · · ·	
REMARKS:	see attached ALS report, work order# 1107046
NMOCD FACILITY:	CRI
TRUCKING COMPANY:	S Brothers

As a condition of acceptance for disposal, I hereby certify that this waste is a non-exempt waste as defined by the Environmental Protection Agency's (EPA) July 1988 Regulatory Determination. To my knowledge, this waste will be analyzed pursuant to the provisions of 40 CFR Part 261 to verify the nature as non-hazardous. I further certify that to my knowledge "hazardous or listed waste" pursuant to the provisions of 40CFR, Part 261, Subparts C and D, has not been added or mixed with the waste so as to make the resultant mixture a "hazardous waste" pursuant to the provisions of 40 CFR, Sections 2613.

AGENT:	SIGNATURE
NAME:	Robert Combs
ADDRESS:	501 E. Main St., Artesia, NM 88210
DATE:	12/5/2011

Form C-138 Revised August 1, 2011

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

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

	REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE
1.	Generator Name and Address: Navajo Refining Co.
2.	Originating Site: Artesia Facility
3.	Location of Material (Street Address, City, State or ULSTR): 501 E. Main St., Artesia, NM
4.	Source and Description of Waste: Excavated soil from fire water line installation located north of our Maintenance building. Please see the attached analytical data from ALS: Work order: 1107046 Sample ID: 1107046-02
5. I,	imated Volume       150 yds       yd³ / bbls       Known Volume (to be entered by the operator at the end of the haul)       yd³ / bbls         GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
	RCRA Exempt:       Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste.         Operation Use Only.       Waste Acceptance Frequency.         Monthly.       Weekly I. Per Load
	RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)
	MSDS Information 🛛 RCRA Hazardous Waste Analysis 🔲 Process Knowledge 🗍 Other (Provide description in Box 4)
hav of t	GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS , representative for do hereby certify that resentative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples re been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 15.36 NMAC.
5.	Transporter: S Brothers
OCI	Permitted Surface Waste Management Facility
N	ame and Facility Permit #:
A	ddress of Facility:
Ν	lethod of Treatment and/or Disposal:
	Evaporation Injection Treating Plant I Landfarm Landfill Other
Was	te Acceptance Status:
PRI	VT NAME: DATE:
SIGI	Surface Waste Management Facility Authorized Agent TELEPHONE NO.:

From:	Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent:	Thursday, December 08, 2011 11:41 AM
То:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc:	Moore, Darrell; Strange, Aaron; Lackey, Johnny
Subject:	Firenorth bundle pad drain

Leona, Randy, Dave and Carl,

We were just notified that there was a small fire on the north bundle pad at approximately 10:00 am on 12/7/2011. The fire was caused by a North Plant flaring event, where it is suspected that hydrocarbons were carried over and dropped onto the adjacent bundle pad. The fire was quickly extinguished with a 30 lb fire extinguisher without causing harm to personnel or damage to equipment.

A final C-141 will be submitted for the event.

If you have any questions, please feel free to contact me.

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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From:	Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent:	Tuesday, December 06, 2011 11:24 AM
То:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Tsinnajinnie,
Cc:	Leona, NMENV Envir
Subject:	Fire, W-16 Crude Bottoms Pump

Carl, Dave, Randy, and Leona,

At approximately 08:15 on 12/6/2011 a fire started on the pump seal of the W-16 Crude Bottoms Pump in the South Plant Crude Unit. At approximately 08:20 the fire was out and the all clear alarm was sounded. The fire was put out with hand held fire extinguishers and only lasted a few minutes. The pump seal was damaged but that is the extent of damages. No one was injured. Nothing spilled off of the concrete containment.

Navajo will submit the C-141 for this incident. If you have any questions please call the Environmental Department at 575-748-3311.

#### **Aaron Strange**

# **Environmental Technician, Senior**

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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1

From:	Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent:	Wednesday, November 30, 2011 1:59 PM
То:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV
Cc:	Lackey, Johnny; Moore, Darrell; Strange, Aaron; Rhodes, Glen
Subject:	C-141 Spillfuel oil spill at west loading rack 22 Nov 2011
Attachments:	C-141fuel oil spill at west rack 22 Nov 2011.doc; 11-23-2011 insp pictures 010.jpg; 11-23-2011 insp pictures 003.jpg; 11-23-2011 insp pictures 004.jpg; 11-23-2011 insp pictures 006.jpg; 11-23-2011 insp pictures 007.jpg

Carl, Dave, Randy, and Leona,

Please see the attached C-141 and for the fuel oil spill at our rail loading rack (west rack) on November 22, 2011. A final C-141 will follow and will include any details following further investigation.

If there are any questions, please contact me at 575-746-5382.

Thanks, Robert

#### Robert Combs

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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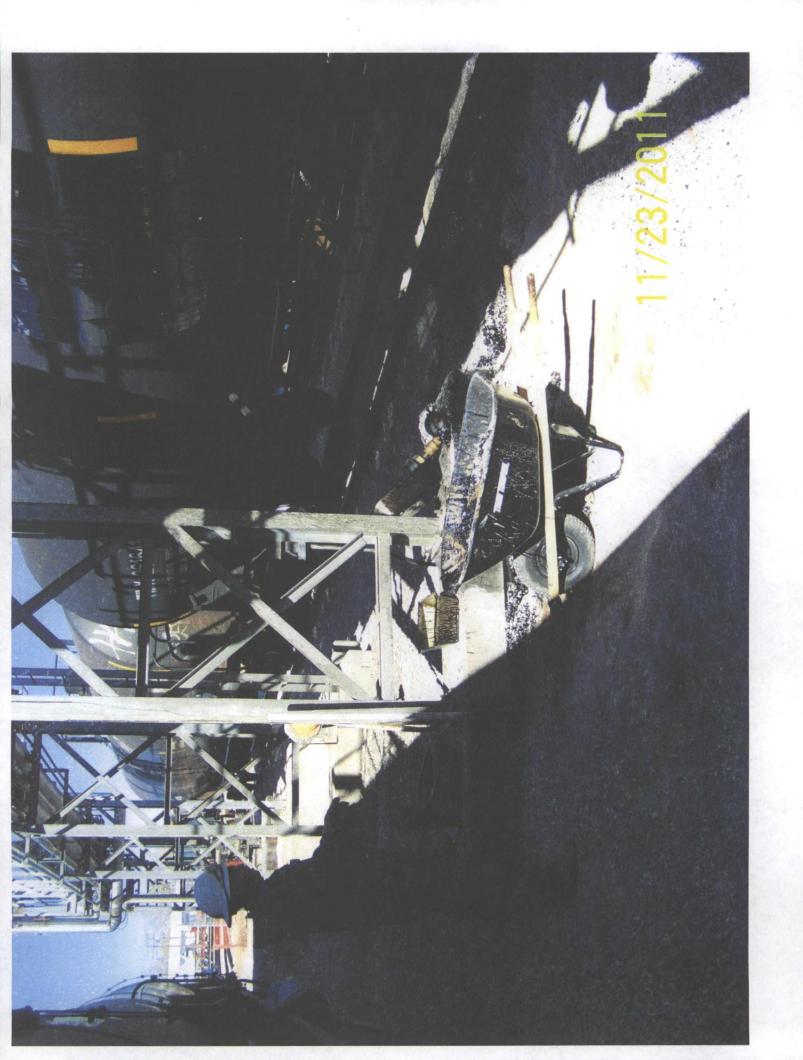
received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any

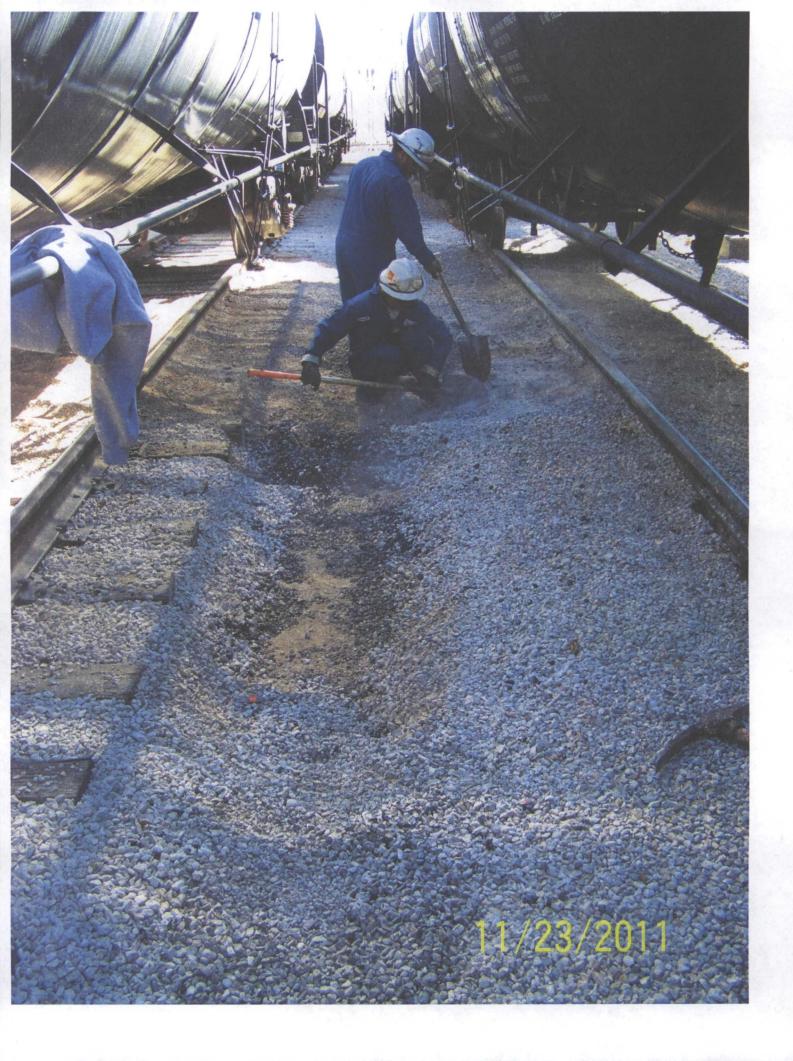
Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

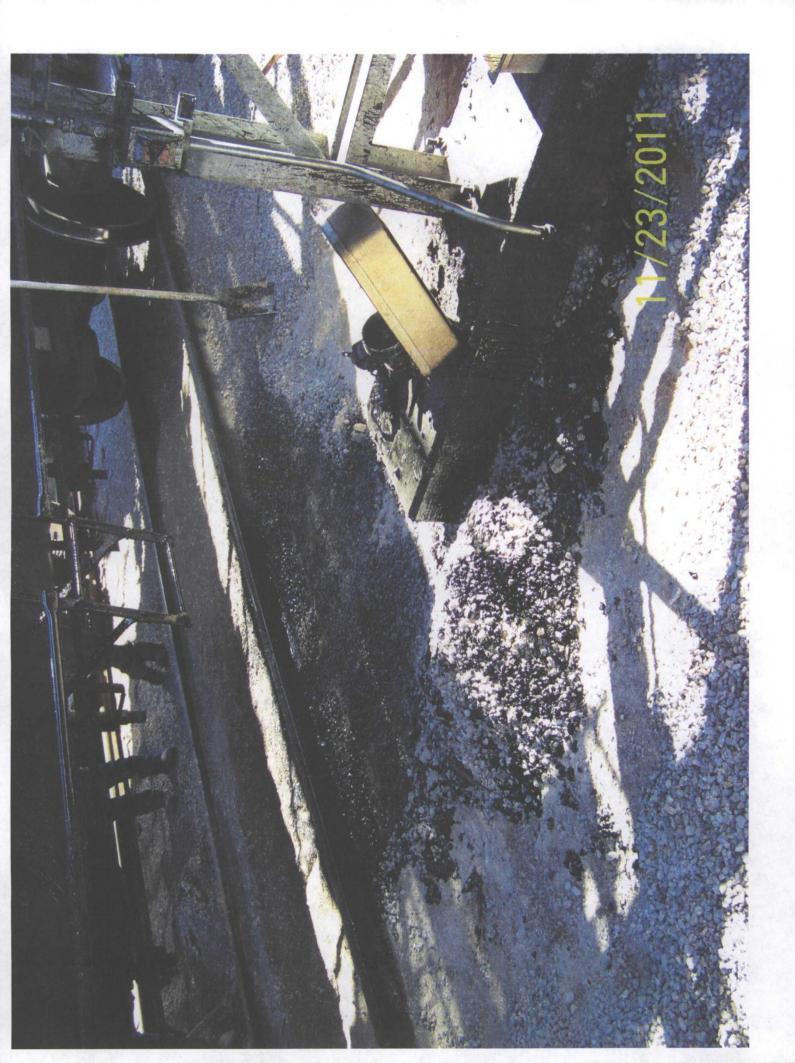
1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa Fe, NM 87505												
			Rel				orrective A	ction	n		· · · · ·	
						<b>OPERA</b>	ГOR		🛛 Initia	al Report	🗌 Fir	nal Repor
Name of C	ompany			efining Co.		Contact	R	obert C	Combs			
Address		]	P.O. Box	159		Telephone I	No. 5	75-746	-5382			
Facility Na	me	1	<u>Artesia fa</u>	cility	•	Facility Type Petroleum Refinery						
Surface Ow	/ner			Mineral (	Owner		<u></u>		API No			
Surfuee on				f					1711110	•		
Unit Letter         Section         Township         Range         Feet from the         North/South Line         Feet from the         East/West Line         County												
		I	L.	titude		Longitud				<u> </u>		
			La			e e						
Type of Rele	ease	Fuel	oil spill		IUKE	OF REL	Release 5 bbl		Volume F	Recovered	N/A	
Source of Re				t loading rack			Iour of Occurrence	e		Hour of Dis		
						20:00 22 1				Nov., 2011		
Was Immedi	iate Notice (		· · · · -			If YES, To						
		K	Yes 🗋	] No 🔲 Not R	lequired		witz, NMED; Da				<b>CD</b>	
By Whom?		A.a	ron Strang	10		Date and F	ales, OCD; Carl (		26 23 Nov.		<u>CD</u>	
Was a Water	course Rea		ion strang	<u>;c</u>			olume Impacting 1			, 2011		·· -
			Yes 🛛	No			name impleting	ine mut	erecurse.			
If a Waterco	urse was Im	pacted, Descr	ibe Fully.	*		4						<u> </u>
a central panel. While he was away, the railcar overflowed, spilling ~5 bbl onto the ground below. When the operator notice that the railcar was flowing over, he quickly closed the valve, stopping further flow to the vessel. The railcar load progress can be checked by a few different methods: by weight as displayed on a central panel; or by level, using a gauge rod to check the fluid level in the vessel. When the operator left the railcar the level was approximately 4-5 inches below the final loading level and during the few minutes he was away, the liquid overflowed.												
Due to the p heat-traced p Nov 2011 to as non-hazar Photos are at	hysical prop biping, the v clean the sp dous waste. ttached to sh	iscosity increation increation is a second	oil, the pro ases as the ce the volu ed area an	oduct must be hea fluid cools, mini ime of stained gra d spill cleanup.	imizing tl	he affected ar	es F to enable flow ea of the spill. O uct mixture was c	peration	is called Ma	aintenance t	he morning	of 23
egulations a bublic health should their or the enviro	Il operators or the envi operations h onment. In a	are required t ronment. The have failed to	o report and acceptane adequately OCD accept	nd/or file certain ce of a C-141 rep / investigate and p	release nort by the remediate	otifications a e NMOCD m e contaminati	knowledge and u nd perform correc arked as "Final R ion that pose a thr e the operator of	ctive act eport" c reat to gr	ions for rel does not rel round wate	eases which ieve the ope r, surface wa	may endar rator of liat ater, human	nger bility 1 health
					OIL CONSERVATION DIVISION							
Signature:												
Printed Nam	e:	Robert Cor	nbs			Approved by Environmental Specialist:						
Title:		Environmen	tal Special	ist		Approval Da	te:		Expiration	Date:		
E-mail Addr	ress: <u>robe</u>	rt.combs@hol	lyfrontier.	com		Conditions o	f Approval:			Attached		
Date:	20 October	r, 2011 Phon	e: 575-74	46-5382			i.					

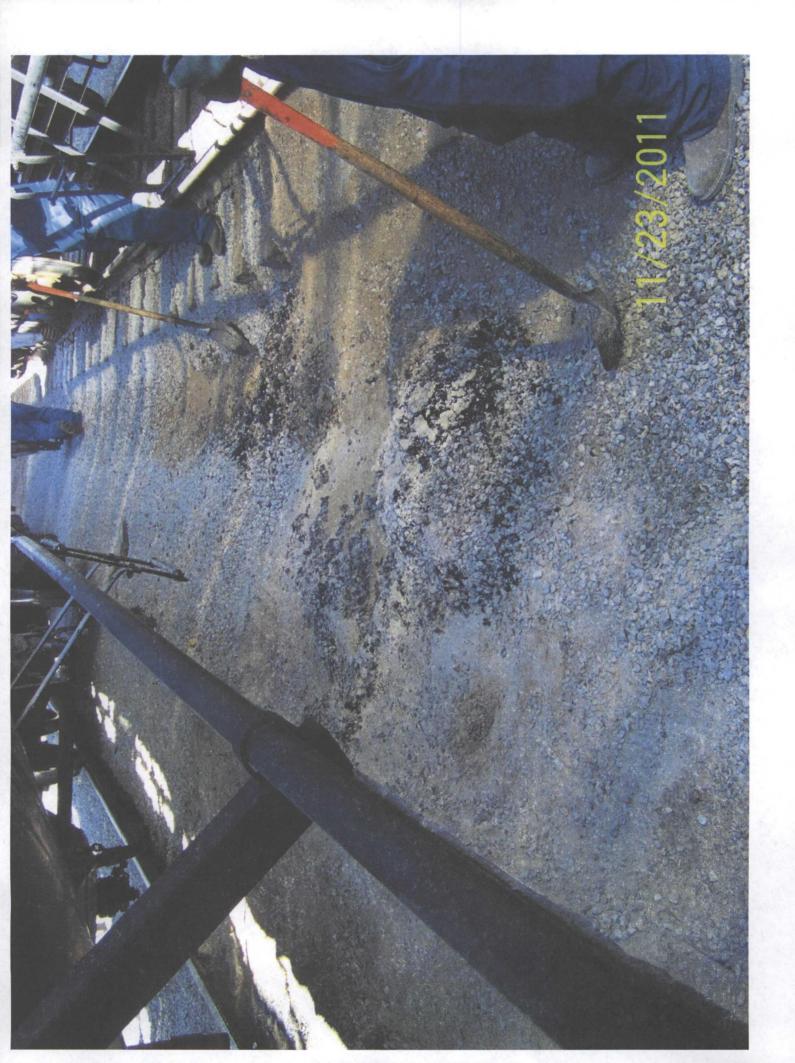
* Attach Additional Sheets If Necessary











From:	Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent:	Wednesday, November 23, 2011 2:26 PM
To:	Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Gonzales, Elidio L, EMNRD; Horowitz, Ruth, NMENV
Cc:	Lackey, Johnny; Moore, Darrell; Combs, Robert; Rhodes, Glen
Subject:	Spill 5bbl Fuel Oil from railcar

Carl, Dave, Randy, E.L, and Ruth,

Navajo Refining Co had a ~5bbl spill of Fuel Oil from a railcar on 11/22/2011 at ~20:00. The railcar overflowed while being loaded. The spilled Fuel Oil is a thick viscous material that was easily cleaned up by a crew with shovels. The waste was placed into a roll-off bin. We will be submitting an initial C-141 next week.

Thanks you,

Aaron

# Aaron Strange Environmental Technician, Senior

Environmental Department Navajo Refining Co, LLC Artesia NM Off: (575) 746-5468 Cell: (575) 703-5057

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received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any

From:Chavez, Carl J, EMNRDSent:Tuesday, November 22, 2011 4:30 PMTo:'Krueger, Pamela'; Moore, Darrell; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENVCc:Dade, Randy, EMNRDSubject:RE: TK-401 Leak

Pam and Darrell:

I think NMED can respond to the AOC; active remediation based on the chemicals of concern; and/or monitoring downgradient from the tank in question.

OCD requests and engineering drawing to determine how the tank will actually be repaired, since it seems like patch work is the plan bases on the LEL and safety concerns. OCD thinks there needs to be competent lower plate, LDS, with another well designed plate above the LDS with an MIT that verifies no leakage to the LDS in order to restore the tank to working order.

Based on the above, the operator can propose an alternative to the above to the agencies.

I'll be back in next Tuesday, November 29, 2011 at 6:30 a.m. NMED should respond tomorrow before the holiday, and if not, maybe by November 28, 2011.

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Krueger, Pamela [mailto:pam.krueger@arcadis-us.com]
Sent: Tuesday, November 22, 2011 2:52 PM
To: Moore, Darrell; Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD
Subject: RE: TK-401 Leak

Tank 401 is already included in the Permit under AOC3 – Southeast Tank Farm. That AOC is included in AOC Group 1. MW-28 is on the downgradient side of the Southeast Tank Farm, almost due east of Tank 401. This well is sampled semiannually and the analyte list includes GRO, DRO, Volatiles, metals and cyanide. **Pamela R. Krueger** | Senior Project Manager | <u>pam.krueger@arcadis-us.com</u> ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77042 T. 713.953.4816 | M. 713.249.8548 | F. 713.977.4620 <u>www.arcadis-us.com</u> ARCADIS, Imagine the result

From: Moore, Darrell [mailto:Darrell.Moore@hollyfrontier.com]
Sent: Tuesday, November 22, 2011 3:32 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD; Krueger, Pamela
Subject: RE: TK-401 Leak

## Et al

We have gotten into this tank and are having problems with LEL levels. The LEL levels are making it unsafe to do any cutting of the floor so that we could perform the path forward delineated below. Obviously, there is some amount of contamination below the tank. Since we cant cut the floor safely, even using water, we would like to propose a modified path forward.

- 1) We will plug all holes in the current floor of the tank. This should isolate whatever contamination is under the tank and allow us to get the LEL's down to a safe level.
- 2) We will then cover the floor with 4" of pea gravel and install a new steel floor in the tank.
- 3) The below path forward mentions MW-99 as being a monitor well to watch. That monitor well is actually WEST of TK 401 and will probably not be relevant to this issue. That was my mistake. However, MW-28 is about 300 ft due east of TK-401 and we can monitor that well for any trends in VOC's. MW-66 is also east of TK-401, but just south of due east.

Since we cant safely approach this any other way, this may be a candidate to be included in our postclosure permit as an Area of Concern (AOC).

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, November 10, 2011 7:48 AM
To: Tsinnajinnie, Leona, NMENV
Cc: Moore, Darrell; Dade, Randy, EMNRD
Subject: FW: TK-401 Leak

Leona:

I spoke with Darrell Moore this morning about the leak and a path forward as requested in his e-mail on 11/8.

The path forward is:

1) Remove the section where the double pinhole leak is located (NW Quadrant of Tank within 3 ft. of cement ring wall (note: no liner exists beneath the tank) and hand auger down to 10 ft. and assess cuttings and PID readings for gross contamination assessment. A bottom hole sample collected using EPA QA/QC and DQO protocols will be analyzed for TPH and VOCs.

2) The closest MW (MW-99) is located about 300 yds E-NE of Tank will be evaluated for increasing trends of VOCs.

3) The Prax-Aire monitoring was implemented about a year ago and there were no indications of a leak at that time according to Darrell. Prax-Aire was called out recently again and detected a leak, but it was the stained soils from the tattle-tale leak leak detection system in the concrete ringwall beneath the tank that indicated that there was a leak.

4) The operator will notify the NMED and OCD before the augering is to be performed. Based on this work, the agencies will need to determine whether active remediation and another MW positioned down gradient is warranted. Darrell indicated that this area was not in a SWMU.

Please chime in if you have comments and/or recommendations at this time. Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: http://www.emnrd.state.nm.us/ocd/

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From: Chavez, Carl J, EMNRD Sent: Tuesday, November 08, 2011 7:24 AM To: Tsinnajinnie, Leona, NMENV Subject: FW: TK-401 Leak

Leona:

I'm wondering if this is the tank with the liner connected to the inner ring-wall of the tank concrete base? Also, I though Navajo had a liquid level alarm to detect product loss or some method to gauge the tanks for possible loss?

I'm reading up on napthas now to see about contaminant hydrogeology and monitoring..... I'll get back with you soon to discuss.

Thanks.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/</u>environmental.htm#environmental)

From: Moore, Darrell [mailto:Darrell.Moore@hollyfrontier.com] Sent: Tuesday, November 08, 2011 7:00 AM To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV Subject: TK-401 Leak

Carl and Leona

Ive attached the C-141 and a few photos of a leak we had in a gasoline tank (Tk-401). This C-141 and the pictures were sent to OCD and NMED on October 7, 2011. We have emptied the tank and found a small hole in the floor in the northwest quadrant and that will be repaired. We have cleaned up the part of the spill that can be reached. Obviously we cant clean up the spill that is under the tank. So Im looking for guidance from OCD and NMED about a path going forward. Do we put this area on the AOC list in our post-closure permit and deal with it that way?

### Darrell Moore

Environmental Manager for Water and Wastec The Holly Frontier Companies Navajo Refining Company, LLC 501 E Main PO Box 159 Artesia NM 88211-0159 Phone: 575-746-5281 Cell: 575-703-5058 CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged and confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement

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From: Sent: To: Cc: Subject: Attachments: Chavez, Carl J, EMNRD Thursday, November 10, 2011 7:48 AM Tsinnajinnie, Leona, NMENV 'Moore, Darrell'; Dade, Randy, EMNRD FW: TK-401 Leak C-141 T-401 leak.pdf; IMAG0112.jpg; IMAG0110.jpg

Leona:

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Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>)

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Thanks.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>)

From: Moore, Darrell [mailto:Darrell.Moore@hollyfrontier.com] Sent: Tuesday, November 08, 2011 7:00 AM To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV Subject: TK-401 Leak

Carl and Leona

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## Darrell Moore

Environmental Manager for Water and Wastec The Holly Frontier Companies Navajo Refining Company, LLC 501 E Main PO Box 159 Artesia NM 88211-0159 Phone: 575-746-5281 Cell: 575-703-5058

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From: Sent: To: Subject: Moore, Darrell [Darrell.Moore@hollyfrontier.com] Thursday, November 10, 2011 7:29 AM Chavez, Carl J, EMNRD Tk -401

## Carl

I just found out that we ARE going to put in a new floor above the old floor with gravel between the two floors. So this tank will have a form of secondary containment when we are finished.

Darrell Moore Environmental Manager for Water and Waste The Holly Frontier Companies Navajo Refining Company, LLC 501 E Main PO Box 159 Artesia NM 88211-0159 Phone: 575-746-5281 Cell: 575-703-5058

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From:	Moore, Darrell [Darrell.Moore@hollyfrontier.com]
Sent:	Tuesday, November 08, 2011 7:00 AM
То:	Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Subject:	TK-401 Leak
Attachments:	C-141 T-401 leak.pdf; IMAG0112.jpg; IMAG0110.jpg

## Carl and Leona

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## State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

# **Release Notification and Corrective Action**

	OPERATOR	🛛 Initial Report	Final Report
Name of Company Navajo Refining Co.	Contact Robert Combs		]
Address 501 E. Main St., Artesia, NM 88210	Telephone No. 575-746-5382		
Facility Name	Facility Type Petroleum Refiner	у	

Surface Owner	Mineral Owner	API No.
		· · · · · · · · · · · · · · · · · · ·

#### LOCATION OF RELEASE

Unit Lette	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L			1			L		

Latitude_____

Longitude

### NATURE OF RELEASE

Type of Release Isomerate (naphtha range)	Volume of Release Unknown	Volume Recovered N/A
Source of Release T-401	Date and Hour of Occurrence	Date and Hour of Discovery
	Unknown	~08:00 3 October, 2011
Was Immediate Notice Given?	If YES, To Whom?	
🗌 Yes 🛛 No 🗌 Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	ercourse.
🗌 Yes 🖾 No		
If a Watercourse was Impacted, Describe Fully.*	· · · · · · · · · · · · · · · · · · ·	
Describe Cause of Problem and Remedial Action Taken.*		
On 24 September, 2011, the Blender operators noticed a stain on the grour		
if the spill was water or the finished product and found no LEL was detect		
analyzer was again used to check the stain and found that <20% LEL was		
412) and Praxair was called to determine if there was a leak in the tank flo		
was reported 3 October, 2011. From the time the stain was noticed until pr	esent, the stain has been damp with n	o liquid present. Please see the attached
photos.		

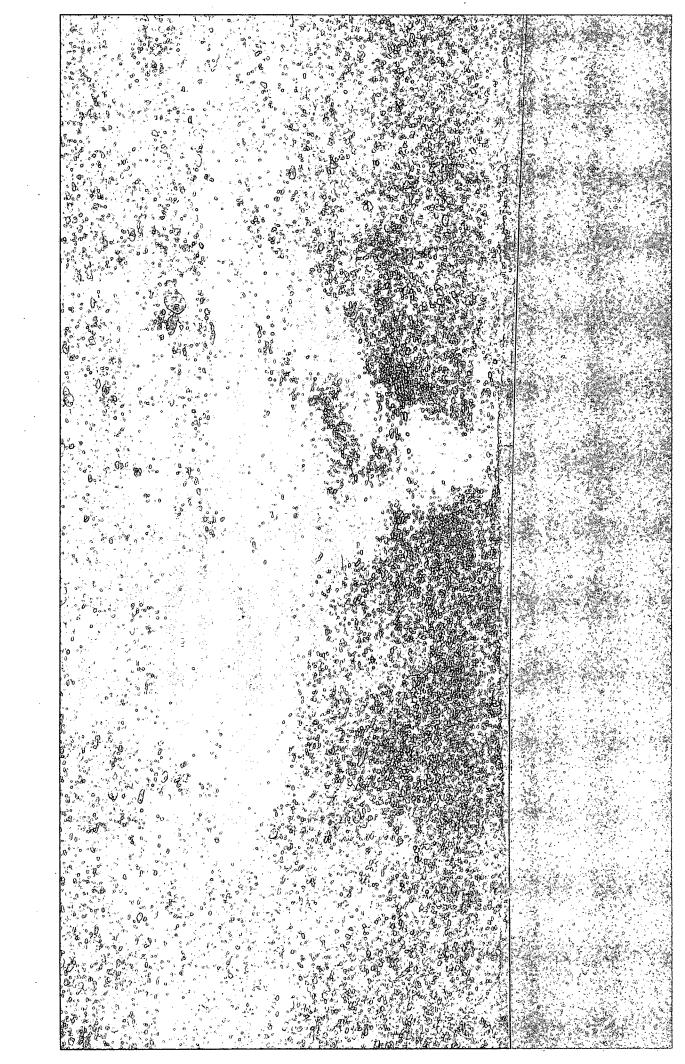
#### Describe Area Affected and Cleanup Action Taken.*

T-401 is elevated above grade by approximately 4 feet. The stain originates at the ring wall and runs down the earthen foundation to a broadened area. The overall length of the stain is  $\sim$ 27 feet and the average width of the run-off path is  $\sim$ 2.5 feet and the widest portion of the stain is 13 feet. A 'tramp' pump has been placed in the area and piped to T-412 in order to empty the contents as soon as possible so that entry and inspection can be made. Once the tank is empty, the area will be excavated and sampled for analyses. A final report will be submitted with clean-up details and the analytical results.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

1.11	OIL CONS	SERVATION	DIVISION
Signature: Multz Printed Name: Robert Combs	Approved by Environmental Sp	pecialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: Robert.Combs@hollyfrontier.com	Conditions of Approval:		Attached
Date: 7 October, 2011 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary



. .

From: Sent: To: Cc: Subject: Chavez, Carl J, EMNRD Thursday, October 20, 2011 10:37 AM 'Combs, Robert'; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD Moore, Darrell; Strange, Aaron RE: C-141 final report--C-693 fire

Robert:

Received.

Recommend that the refinery include in its SOP(s) high-risk process areas, etc. with potential for explosive atmospheric areas with heated insulated lines that it check for hydrocarbon stains or leaks on lines before restarting the system and either wash the lines with soap and water and/or replace unwashable stained insulation before startup to prevent an ignition source.

Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3490 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: <u>http://www.emnrd.state.nm.us/ocd/</u> "Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <u>http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental</u>)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Thursday, October 20, 2011 10:03 AM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Moore, Darrell; Strange, Aaron
Subject: C-141 final report--C-693 fire

Leona, Carl and Randy,

Please see the attached C-141 final report for the fire that occurred October 13, 2011 at C-693 hydrogen compressor. Please let me know if you have any questions.

Thanks, Robert

#### **Robert Combs**

Environmental Specialist The HollyFrontier Companies P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 Robert.Combs@hollyfrontier.com

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

## State of New Mexico Energy Minerals and Natural Resources

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 8, 2011

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

Release	Notification	and	Corrective	Action

		OPERATOR	Initial Report	🛛 Final Report
Name of Company	Navajo Refining Co.	Contact	Robert Combs	
Address	P.O. Box 159	Telephone No.	575-746-5382	
Facility Name	Artesia facility	Facility Type	Petroleum Refinery	
Surface Owner	Mineral O	wner	API No.	

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude_____ Longitude_

### NATURE OF RELEASE

Type of Release small fire	Volume of Release unknown	Volume Recovered N/A					
Source of Release C-693 lube oil supply/governor	Date and Hour of Occurrence	Date and Hour of Discovery					
•	09:45 13 Oct, 2011	09:45 13 Oct., 2011					
Was Immediate Notice Given?	If YES, To Whom?						
🛛 Yes 🔲 No 🗌 Not Required	Leona Tsinnajinnie, NMED						
	Carl Chavez, OCD						
· · · · · · · · · · · · · · · · · · ·	Randy Dade, OCD						
By Whom? Robert Combs		5:00 13 Oct., 2011					
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.					
🗌 Yes 🖾 No							
If a Watercourse was Impacted, Describe Fully.* N/A.							
Describe Cause of Problem and Remedial Action Taken.*							
At ~09:45 on 13 October, 2011, the operations group was starting the Unit	33 hydrogen recycle compressor (C-6	93). The compressor is powered by a steam					
turbine and had been shut down in order to allow a maintenance crew to pe		, , , ,					
· · · · · · · · · · · · · · · · · · ·							
Following normal start-up procedures, the operators began to 'line-up' the the steam began to flow through the piping and turbine, the piping and equ							
insulating material ignited. Operators quickly utilized a steam hose and fire							
extinguished, the operators began to start the compressor again.	, shangalonioù to pat out ino ino ana io						
There were no injuries or equipment damaged as a result.							
Describe Area Affected and Cleanus Action Taken *							
Describe Area Affected and Cleanup Action Taken.*							
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and							
regulations all operators are required to report and/or file certain release r							
public health or the environment. The acceptance of a C-141 report by th							
should their operations have failed to adequately investigate and remediat							
or the environment. In addition, NMOCD acceptance of a C-141 report of							
federal, state, or local laws and/or regulations.	, ,						
	OIL CONSER	VATION DIVISION					
Signature:							
Approved by Environmental Specialist:							
Printed Name: Robert Combs							
Title: Environmental Specialist	Approval Date:	Expiration Date:					
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached					
Date: 20 October, 2011 Phone: 575-746-5382							

* Attach Additional Sheets If Necessary

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	Combs, Robert [Robert.Combs@hollyfrontier.com] Thursday, October 13, 2011 4:21 PM
To:	Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Subject:	Moore, Darrell; Lackey, Johnny; Strange, Aaron small fire at C-693 turbine

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire this morning ~9:45 on a steam turbine-powered compressor. The compressor was being started after completion of maintenance activities and some lube oil soaked insulation ignited. The fire was quickly put out with a fire extinguisher. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks, Robert

### **Robert Combs**

Environmental Specialist The HollyFrontier Companies . P.O. Box 159 Artesia, NM 88211-0159 office: 575-746-5382 cell: 575-308-2718 fax: 575-746-5451 <u>Robert.Combs@hollyfrontier.com</u>

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