

GW - 028

**GENERAL
CORRESPONDENCE**

YEAR(S):

2006 - Present

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 4, 2019 2:08 PM
To: 'Holder, Mike'
Cc: Denton, Scott; Combs, Robert; Leik, Jason; Griswold, Jim, EMNRD; Wade, Gabriel, EMNRD; Brancard, Bill, EMNRD; Ames, Eric, EMNRD
Subject: Artesia Refinery (GW-28) Request for Variance Under 19.15.29 et seq. NMAC
Attachments: 2019-11-27 HFNR Variance Request.pdf

Mike, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of the attached “Request for Variance” letter (letter) under 19.15.29 et seq. NMAC (Releases) dated November 27, 2019 for the above subject WQCC permitted facility (facility) under 20.6.2 et seq. NMAC (Ground and Surface Water Protection).

Upon preliminary review of the request, OCD is aware of the reference to the C-141 Release Notification Form (Form) in the WQCC Permit (Permit) to satisfy environmental notification requirements under the WQCC Regulations for the above subject facility. The New Mexico Environment Department also allows it to be used to satisfy Resource Conservation and Recovery Act notification requirements. The Form was developed under 19.15.29 NMAC.

Besides OCD’s use of the Form to satisfy notification for environmental releases at the facility under the Permit, OCD has relied upon 19.15.29 NMAC to meet the environmental investigations, remediations, etc. technical guidelines at the facility by the Permittee to satisfy the intent of the WQCC Regulations, which are much less prescriptive than 19.15.29 et seq. NMAC. This was likely allowed by OCD based on convenience and recognition that technical guidelines served as a tool for the Permittee to follow for releases at the facility. OCD has in instances required the technical guidelines to be followed to meet WQCC Regulations by reference; however, OCD has always recognized that 19.15.29 NMAC are not applicable to the refinery. OCD reserves the right to require technical guidelines to be followed. In the event a Permittee refuses to follow prescribed guidelines, OCD could develop similar guidelines under WQCC Regulations for application at the facility.

The very nature of the letter is based on 19.15.29 et seq. NMAC applicability, which would seem not to apply directly to the above subject regulated facility. OCD could state it appears the Permittee wishes to forego certain elements of the 19.15.29 NMAC technical guidelines mentioned in the letter? OCD notices 19.15.29.12C(2) NMAC (Remediation Plan Requirements), which OCD could consider to be a guideline under the WQCC Regulations for deferred environmental remediation requests at the facility. However, while OCD could use this technical guideline to assess a site-specific deferral request, OCD has always generally required all releases to be investigated, characterized and cleaned up if there is no infrastructure, public safety, etc. reasons preventing this from happening. For example, a cooling tower release with fluids with elevated WQCC constituents would likely be required to be cleaned up at the facility by the OCD unless infrastructure issues, public safety, etc. are of concern warranting deferral of the environmental investigation, remediation, etc. OCD would not regard any given release within the facility property to be allowed to remain because it is on refinery property and is concerned about setting any precedent that would allow it.

There is WQCC Regulation 20.6.2.1210 NMAC (Variance Petitions), but I do not believe they would apply based on the intent of the letter?

I have copied Energy, Mineral and Natural Resources Department (EMNRD) Legal Counsel for an official response or “chime in” herein to the letter.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)

New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Holder, Mike <Michael.Holder@hollyfrontier.com>
Sent: Wednesday, November 27, 2019 2:55 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Leik, Jason <Jason.Leik@HollyFrontier.com>
Subject: [EXT] Request for Variance

Carl – per our discussion, attached is a request for variance from portions of NMAC 19.15.29. Please don’t hesitate to contact us with any questions or if you need additional information. We’d be happy to have a call to discuss following your review. Hope you have a great Thanksgiving!!

Thanks,
Mike

Mike Holder
Corporate Environmental Specialist – Water & Waste
The HollyFrontier Companies
2828 North Harwood, Suite 1300
Dallas, TX 75201
(575) 308-1115 (cell)

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November 27, 2019

VIA ELECTRONIC MAIL

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

Re: Request for 19.15.29 NMAC Variance

Dear Mr. Chavez:

HollyFrontier Navajo Refining LLC (HFNR, the Refinery) is submitting this letter to request a variance from the current spill cleanup regulations (19.15.29 NMAC) for the cooling tower blowdown water release¹ and future releases within Refinery boundaries. The Refinery is already subject to an approved New Mexico Oil Conservation Division (OCD) Discharge Permit (GW-28) and an approved and permitted Resource Conservation and Recovery Act (RCRA) Corrective Action Program that is administered under the oversight of the OCD and the New Mexico Environment Department (NMED). As you are aware, Provision 2.C of Discharge Permit GW-028 requires HFNR to comply with 20.6.2.1203 New Mexico Administrative Code (NMAC) for release reporting, including notification and corrective actions, in addition to 20.6.2.3103 NMAC that addresses NMED's groundwater standards. In lieu of performing a separate corrective action under an additional parallel program (i.e., OCD's "Spill Rule") for each release within Refinery boundaries, the OCD has the authority to allow a variance to any requirement of 19.15.29 NMAC if the following criteria from 19.15.29.14 NMAC are met:

- *a detailed statement explaining the need for a variance; and*
- *a detailed written demonstration that the variance will provide equal or better protection of fresh water, public health and the environment.*

Each of these criteria are addressed separately below.

¹ Among other submittals, this release was the subject of an August 28, 2019 letter report discussing initial response activities and site characterization, and requesting closure. HFNR incorporates this letter report by reference in this request. The submittal of documentation to OCD relating to this release does not constitute a waiver of any position relating to the applicability of OCD's rules or regulatory jurisdiction to the release.

Need for Variance

The Refinery has been in operation under various owners and operators within the current Refinery boundaries since 1925. Due to the extensive history of the Refinery, impacts from historic releases and impacts from modern releases are comingled, and thus frequently difficult to differentiate or delineate. Although HFNR strives to prevent releases, accidental spills do occasionally occur, and the Refinery has response measures in place. These measures, in conjunction with worker training and personal protective equipment (PPE) requirements further ensure protection of human health and the environment. As mentioned above, the Refinery is a RCRA-permitted facility with an approved, refinery-wide, corrective action program including groundwater monitoring and recovery, to ensure that releases, both historical and future, will be addressed in a manner protective of human health and the environment. The corrective actions align with the current and planned future land use of the property as a petroleum refinery, and should the land use change, the program would change consistent with the new intended use. HFNR is seeking a variance so that there is one clear and efficient process for expeditiously addressing spills and releases within the Refinery boundary given the multiple and competing applicable permits, plans, and regulatory frameworks.

Protectiveness

Fresh Water

The first occurrence of groundwater at the Refinery is the Shallow Saturated Zone, which consists of interbedded sand and gravel channels at 15 to 30 feet below ground surface (bgs). As noted above, the Refinery operates under permits issued by OCD (GW-028) and by NMED (RCRA Permit). Under the terms of these permits, the Refinery is required to evaluate groundwater conditions and perform corrective actions, including the maintenance of a facility-wide groundwater monitoring and recovery system. The permit actions and requirements serve to further ensure protection of fresh water through the groundwater cleanup program within Refinery boundaries.

Public Health

It is the understanding of HFNR that the OCD spill cleanup regulations were developed to specify a pathway to closure for uncontrolled oilfield sites that lack security/site controls. However, lack of security/site controls is not an issue within the Refinery, since the Refinery property is under a 24-hour security program and is not accessible to the public. Additionally, shallow groundwater in the vicinity of the Refinery is not generally used for domestic or agricultural purposes due to naturally poor quality and low productivity; as a result, there is very limited potential for the general public to come in contact with any impacts in the shallow groundwater. HFNR's groundwater monitoring system includes downgradient wells and an on-going process to identify potential receptors and mitigate associated risks as they might occur with changing conditions such as new non-Refinery well installations. Therefore, the potential risk for the general public to become exposed to spilled materials is very low. All Refinery employees are required to follow internal safety procedures, are appropriately trained to

understand the potential hazards within the facility and are provided with necessary equipment to maintain a safe work environment.

Environment

The RCRA Corrective Action portion of the RCRA Permit also addresses soils at the Refinery in addition to groundwater, by requiring a systematic investigation of soils to ensure that any spills within the boundaries of the Refinery are addressed in a manner protective of human health and the environment and align with the risk profile of an industrial facility. Requirements and procedures outlined in the RCRA Permit provide adequate protection of the environment within the Refinery area and require that releases outside the Refinery boundary be addressed.

The OCD Discharge Permit (GW028), as mentioned above, also addresses groundwater and vadose zone impacts via compliance with the New Mexico Water Quality Act.

The Refinery is an industrial area with specific programs in place to prevent exposure and respond to spills, and based on these safeguards, HFNR believes that cleanup to a standard intended to restore an uncontrolled site to background or native conditions, as required in the Spill Rule, is not appropriate for the Refinery. Specifically, the Refinery is a controlled, operating facility and the future land use will remain as a petroleum refinery. The permitted RCRA Corrective Action Program and the requirements of OCD Permit GW-28 function to ensure protection of human health and the environment and provide for mechanisms to address changes in land use and risk, as appropriate. As the United States Environmental Protection Agency (EPA) noted in the preamble to the proposed 40 CFR Part 264, Subpart S rule (55 FR 30803):

“As long as the permit is in place and the facility is under the management of the owner/operator, exposure to contaminated media within the facility boundary, such as contaminated soils, would be significantly less than it would be in an area of unrestricted access, where future uses might include residential or agricultural development. In such controlled use situations, EPA believes that it will often be reasonable to require prompt cleanup to levels consistent with current use, but to defer final cleanup as long as the owner/operator remains under a RCRA permit.”

In addition, in 55 FR 30829, EPA comments:

*“It is not the intention of the Agency to create a ground-water **“island of purity”** that is unlikely to be used for drinking water or other (nonindustrial) beneficial purposes due to its location in an area historically used only for industrial purposes.” (emphasis added)*

In summary, investigation and remediation under the existing permits provides equivalent protection of fresh water, public health, and the environment per the requirements of 19.15.29 NMAC.

Specific Variance Requests

The following presents the specific variances/alternative approach to 19.15.29 NMAC for the cooling tower blowdown water release and future releases within Refinery boundaries. HFNR proposes to continue to use other sections of 19.15.29 NMAC as guidelines, including release notification (19.15.29.9 NMAC) and reporting (19.15.29.10 NMAC). A spill at the Refinery will be reported in a timely and detailed manner, along with the subsequent response action and justification for work performed, as already required by the conditions of the GW-28 Permit.

Specifically, HFNR is requesting a variance from 19.15.29 NMAC as follows:

- **19.15.29.11 NMAC – Site Assessment and Characterization**

HFNR is requesting a variance from the assessment and characterization requirements for spills or other (new) releases that occur within Refinery boundaries. Since the entire Refinery is subject to the requirements of GW-28 and the RCRA Permit, HFNR is obligated to address impacts to soil and groundwater on a sitewide basis (i.e., for all contiguous property under the control of the owner/operator). Therefore, HFNR thinks that the automatic delineation of a spill within the Refinery to the standards in 19.15.29.11.A.(5) NMAC is not always necessary and sometimes impossible due to Refinery infrastructure and operations. HFNR will continue to evaluate individual incidents and assess impacts from specific releases on a spill-by-spill basis in conjunction with the OCD. Reporting and notification per 19.15.29.9 and 10 NMAC, as well as the requirements of GW-28, will provide an opportunity for discussion with the OCD and to determine if additional steps are required under current permit requirements. Spills outside of Refinery boundaries would be covered by 19.15.29 NMAC and HFNR will continue to follow the standard OCD Spill Rule process.

- **19.15.29.12 NMAC – Remediation and Closure**

HFNR is requesting a variance to the remediation and closure requirements of 19.15.29.12. Spills will be addressed using risk-based analysis to determine whether remediation is necessary. Using NMED's *Risk Assessment Guidance for Site Investigations and Remediation*, HFNR will continue to work with OCD and NMED to appropriately assess and take corrective action. Any long-term remediation of constituents of concern, including hazardous constituents, can be managed under the RCRA program. HFNR suggests equivalent closure of spill cases through their inclusion in future actions within the RCRA Corrective Action process.

Surface spills, such as the cooling tower spill, will be addressed via cleanup and as necessary to protect worker health and minimize the potential for future migration to groundwater, to the extent practicable, but the method and extent of remediation will be determined on a case-by-case basis using risk-based principles. Limited assessment will be performed to characterize the spill, but as stated above, full delineation of spills is not practical or valuable within an operating refinery with an extensive soil and groundwater corrective action program. HFNR proposes to use risk-based analysis to determine if

remediation is necessary and will address these items on a case-by-case basis in conjunction with OCD and NMED (as needed) per the reporting requirements.

- **19.15.29.13 NMAC – Restoration, Reclamation and Re-Vegetation**

For spills within the Refinery boundaries, the requirements of 19.15.19.13 NMAC are inapplicable. As an active refinery, the restoration of impacted areas is contingent on specific work activity and safety regulations. Restoration within the Refinery would also be to existing conditions (i.e., as a refinery) and not to “natural” conditions. HFNR proposes to restore the surface of its property consistent with its current and future use (i.e., industrial use as a refinery). This will allow for a timely and safe process for reestablishing impacted areas to their original condition. If HFNR performs excavation of a surficial spill, the area would be restored as necessary to meet the needs of Refinery operations, including sloping for run-off control etc. Re-vegetation is not appropriate within Refinery boundaries since the area is largely covered with concrete for process units, or gravel/caliche as appropriate, and vegetation poses a potential additional fire risk.

Based on the above, HFNR believes that a variance/alternative approach for spills within operating Refinery boundaries is necessary, protective, and appropriate. As previously discussed, the Refinery is already required to address releases per the conditions of its Discharge Permit, GW-28. Should you have any questions or comments about this request for a variance, or need any additional information, please do not hesitate to contact me by phone at (575) 746-5487 or via email at scott.denton@hollyfrontier.com. We look forward to your response to our proposal and appreciate your assistance in this matter.

Sincerely,



Scott M. Denton
Environmental Manager

c: HollyFrontier: M. Holder, R. Combs, J. Leik

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, November 8, 2019 2:01 PM
To: 'Combs, Robert'; Tsinnajinnie, Leona, NMENV
Cc: Leik, Jason; Denton, Scott
Subject: RE: Artesia GW Monitoring - New PSH in October 2019

Robert:

Received. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Tuesday, November 5, 2019 8:57 AM
To: Tsinnajinnie, Leona, NMENV <Leona.Tsinnajinnie@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Leik, Jason <Jason.Leik@HollyFrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: [EXT] Artesia GW Monitoring - New PSH in October 2019

Leona and Carl,

This email serves to notify the New Mexico Environment Department (NMED) of new occurrences of phase-separated hydrocarbon (PSH) in three wells at the HollyFrontier Navajo Refining LLC (HFNR) Artesia Refinery (refinery) located at 501 East Main Street in Artesia, New Mexico. The Post-Closure Care Permit (PCC Permit) issued by the NMED and the *2018 Facility Wide Groundwater Monitoring Work Plan* (2018 FWGMWP) approved by the NMED on March 2019, require HFNR to notify NMED if PSH is present in wells where PSH has not previously be encountered.

During the semi-annual groundwater monitoring event conducted October 22-23, 2019, PSH was observed for the first time in monitoring wells MW-127, MW-128, and MW-137 at the following apparent in-well thicknesses:

- MW-127: 1.41 feet;
- MW-128: 1.01 feet; and
- MW-137: 0.18 feet

Plots of measured apparent in-well thicknesses and groundwater elevations over time in these wells are attached. HFNR believes the observed occurrences of PSH in the wells listed above are attributed to declining groundwater elevations, and are not indicative of a new release or PSH migration, as described below:

- MW-127: located in the Field East of Refinery, was installed on January 23, 2014, when groundwater elevations across the refinery were historically high. Groundwater elevations measured at this well decreased 6.68 feet from a historical maximum in November 2014 to a historical minimum in October 2019. Indications of hydrocarbon impacts (odor and staining) were observed in the vadose and saturated zones during drilling and

installation of MW-127. OIL-IN-SOIL™ screening tests (shake tests) were also performed on soil samples collected from MW-127 during drilling activities and shake test results were positive for the presence of PSH within the vadose zone and saturated zone.

- MW-128: located in the Field East of Refinery, was installed on January 29, 2014, when groundwater elevations across the refinery were historically high. Groundwater elevations measured at this well decreased 4.92 feet from a historical maximum in November 2014 to a historical minimum in October 2019. Indications of hydrocarbon impacts (odor and staining) were observed in the vadose and saturated zones during drilling and installation of MW-128. OIL-IN-SOIL™ screening tests (shake tests) were also performed on soil samples collected from MW-128 during drilling activities and shake test results were positive for the presence of PSH within the vadose zone.
- MW-137: located in the North Refinery, was installed on November 9, 2014, when groundwater elevations across the refinery were historically high. Groundwater elevations measured at this well decreased 5.96 feet from a historical maximum in October 2014 to a historical minimum in October 2019. Indications of hydrocarbon impacts (odor and staining) were observed in the vadose and saturated zones during drilling and installation of MW-137. PSH has also been detected in nearby downgradient well MW-138 that was also installed in 2014.

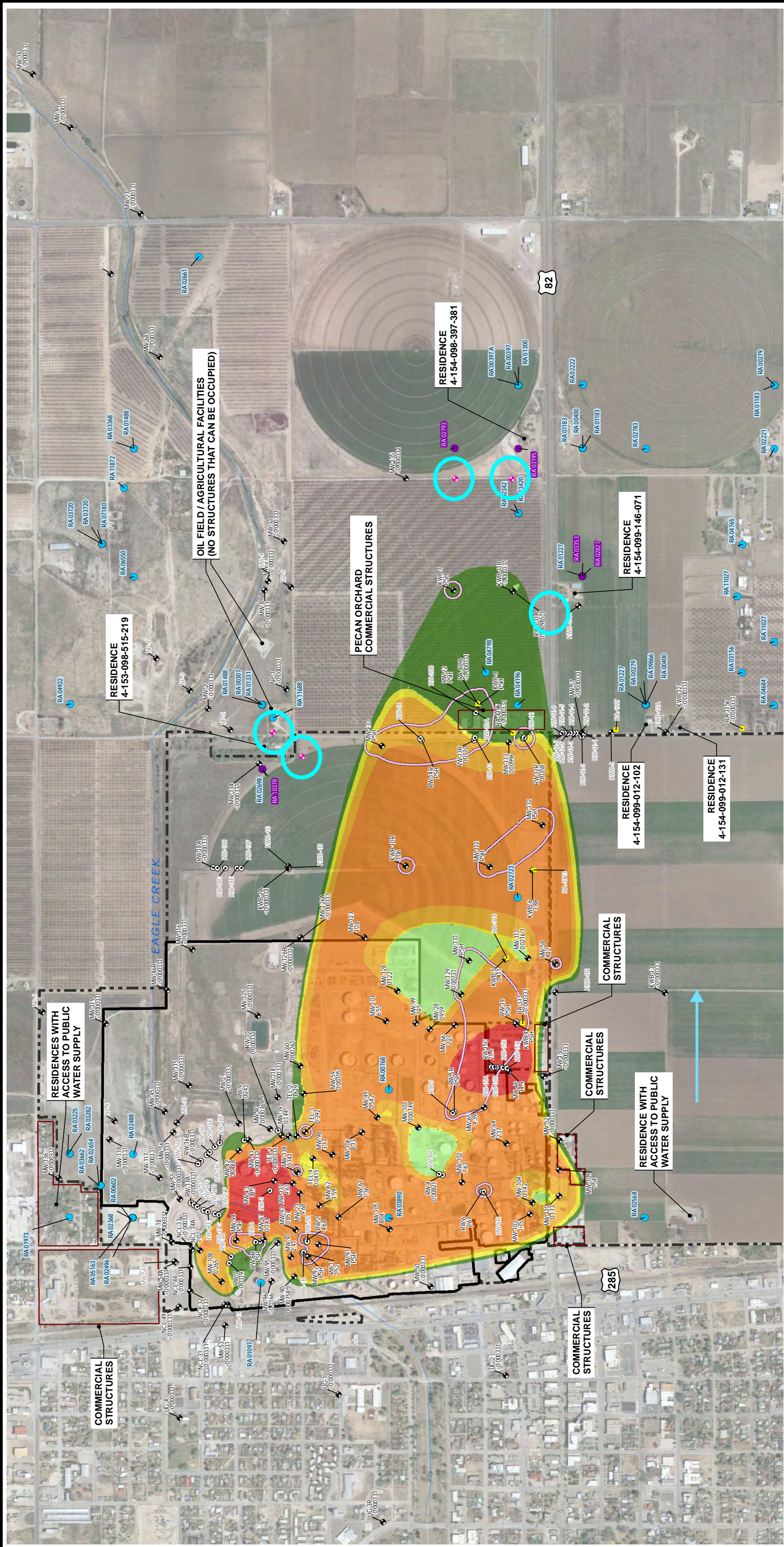
If you have any questions or comments regarding this notification, please contact me at (575) 746-5382.


Thank you,
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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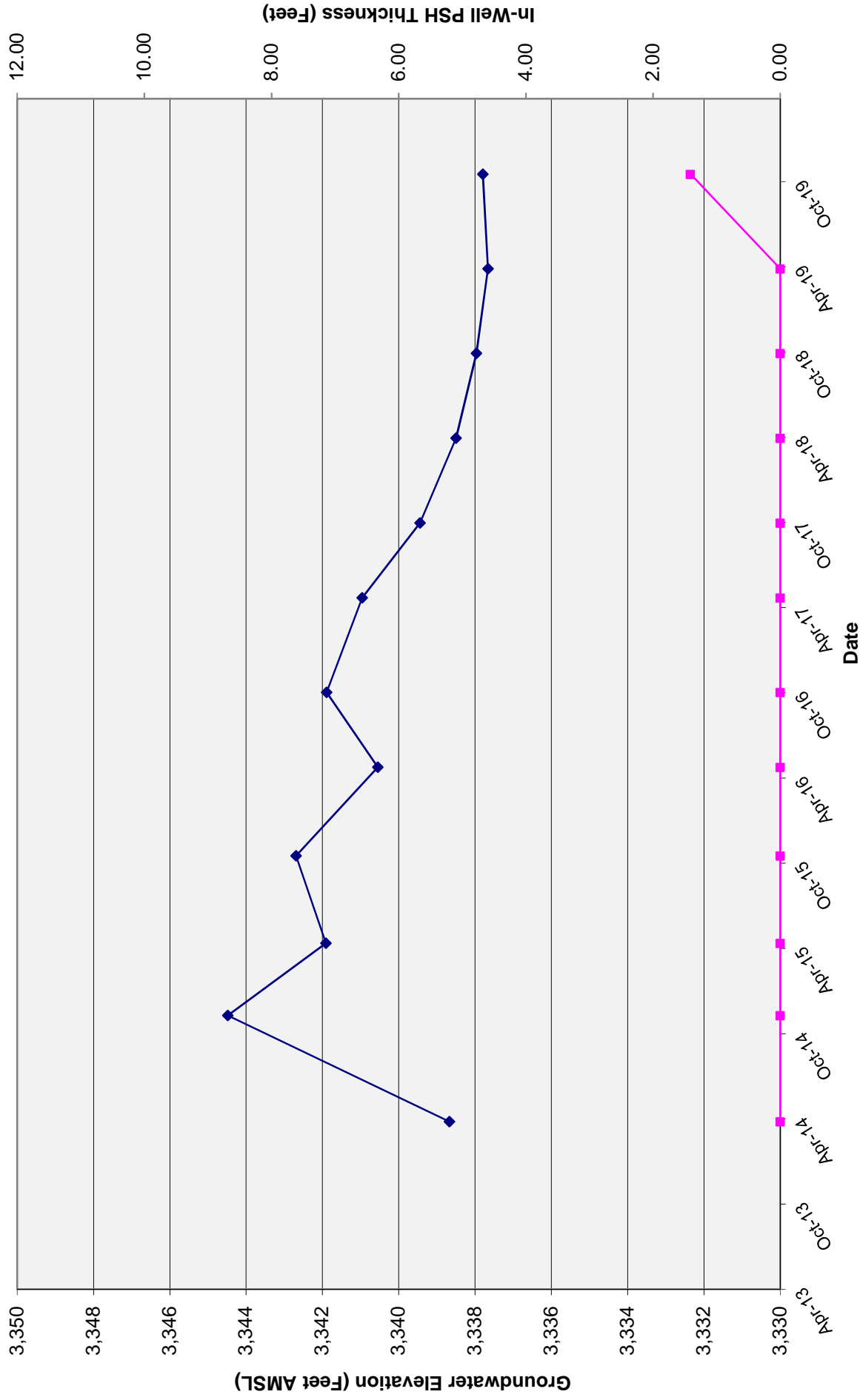


PROJECT:	RECEPTOR SURVEY AND VAPOR INTRUSION EVALUATION HOLLYFRONTIER NAVAJO REFINERY LLC ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO		
TITLE:	POTENTIAL GROUNDWATER RECEPTORS AND BENZENE ISOCONCENTRATION MAP (FIRST 2018 SEMIANNUAL EVENT)		
DRAWN BY:	MHORN	PROJ. NO.:	326778
CHECKED BY:	AEJURI	FIGURE 2	
APPROVED BY:	JSPEER		
DATE:	APRIL 2019		
			
		506 East Huntland Drive, Suite 250 Austin, TX 78752 Phone: 512.329.6080 www.trcsolutions.com	
FILE NO.:	326778_2_BenzSpring.mxd		

MW-127: Groundwater Elevations and In-Well PSH Thicknesses

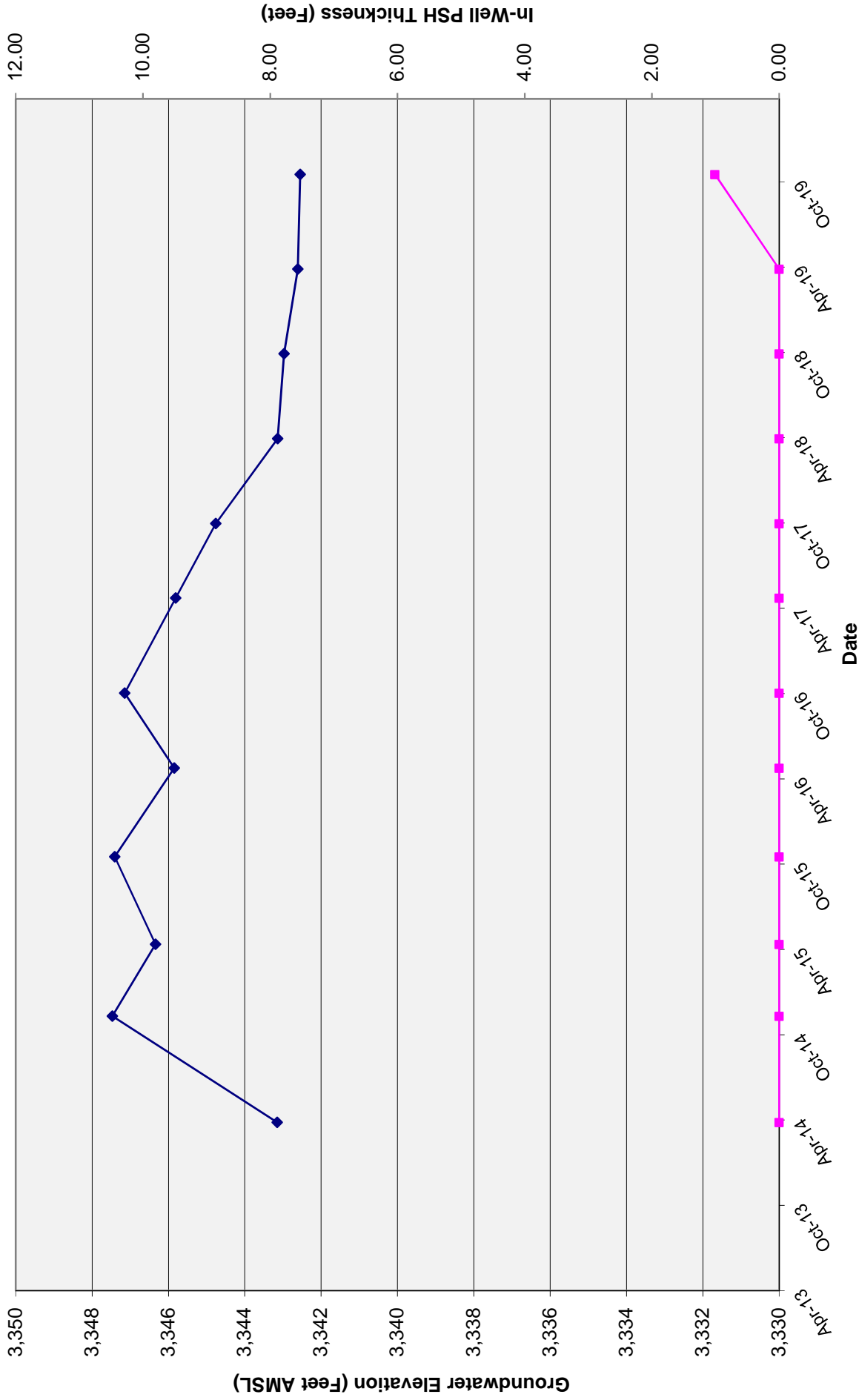
HollyFrontier Navajo Refining LLC - Artesia Refinery

Field East of Refinery



MW-128: Groundwater Elevations and In-Well PSH Thicknesses

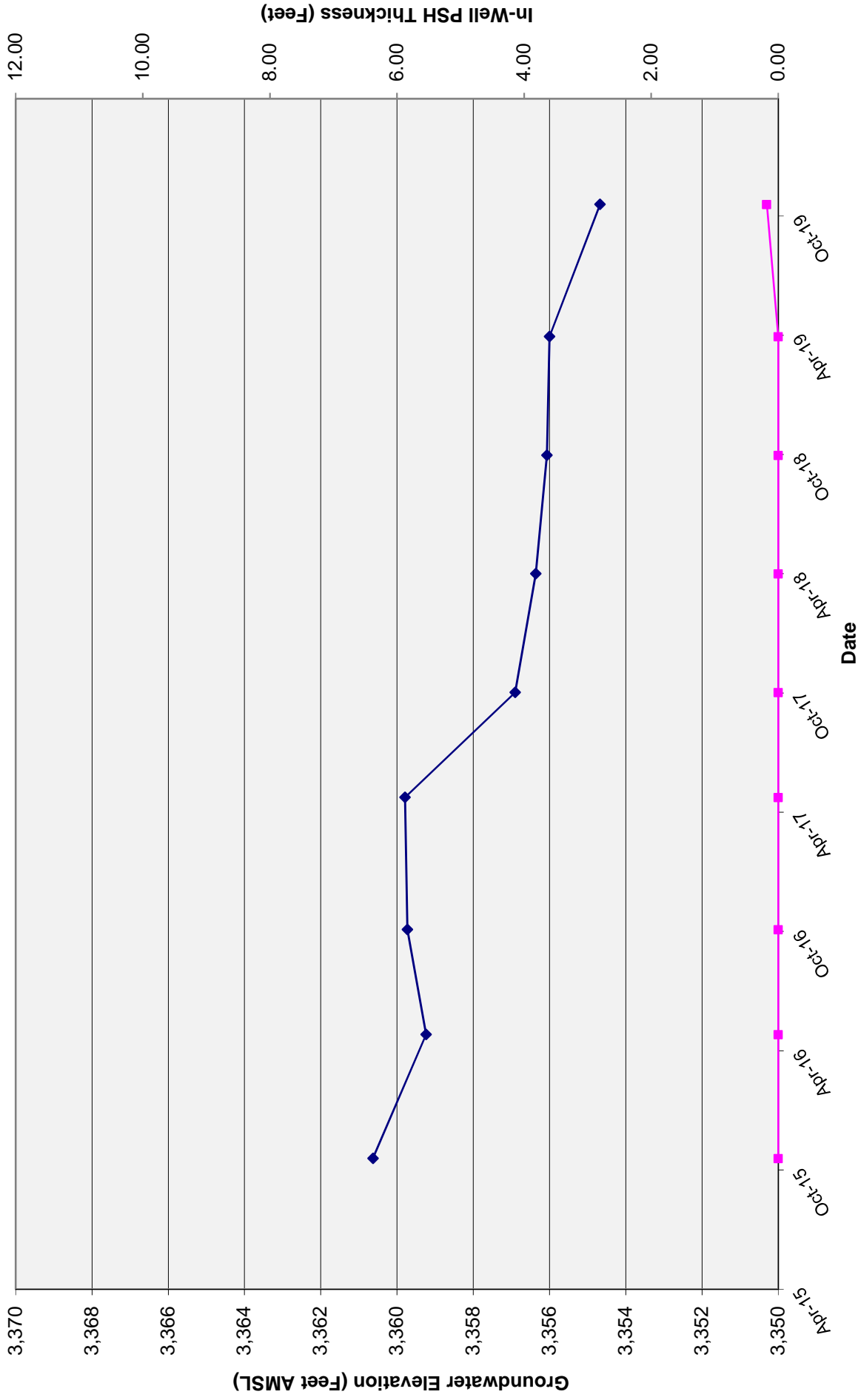
HollyFrontier Navajo Refining LLC - Artesia Refinery
Field East of Refinery



MW-137: Groundwater Elevations and In-Well PSH Thicknesses

HollyFrontier Navajo Refining LLC - Artesia Refinery

Field East of Refinery



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, April 18, 2019 4:25 PM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Griswold, Jim, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: HollyFrontier Navajo Refining, LLC Artesia Refinery (GW-28) Stage 1 Abatement Plan for the Reverse Osmosis Reject Discharge Fields (March 2019)

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject plan.

OCD believes that while the plan is well constructed and professional with an acceptable monitoring approach , the [plan](#) is fundamentally deficient in that it lacks actual abatement (Stage 2) going forward, which is what OCD was expecting. There appears to be an option for phytoremediation, but it is not put forth as the stage 2 remediation plan.

OCD requires Navajo Refining, LLC (Navajo) to review the WQCC Regulations, i.e., 20.6.2 NMAC (Abatement Provisions) and amend or resubmit a stage 2 plan to OCD for approval. Navajo may want to propose or consider other remedial options for feasibility based on this message.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, February 1, 2019 4:11 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD; Goetze, Phillip, EMNRD; Bratcher, Mike, EMNRD; Brancard, Bill, EMNRD
Cc: Denton, Scott; Holder, Mike; Combs, Robert; Dade, Lewis (Randy)
Subject: [EXT] RE: Navajo Refining WDW-4 API# 30-015-44677 (Eddy Co.)
Attachments: OCD Mod Extension Approval 12-14-2018.pdf

Gentlemen,

I want to thank you for your assistance, guidance and understanding throughout the permitting, drilling and startup of WDW-4. The well has been operating since Wednesday January 16th and we brought the Secondary Reverse Osmosis (SRO) unit online last Thursday January 24th.

I am happy to report that the RO Reject to the Farm Fields stopped last Thursday January 24, 2019! We made it to the finish line.

I hope you all have a wonderful weekend.

Let me know if you have any questions.

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Friday, December 14, 2018 11:09 AM
To: Denton, Scott <Scott.Denton@HollyFrontier.com>
Cc: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: RE: Navajo Refining WDW-4 API# 30-015-44677 (Eddy Co.)

Scott, et al.:

Please find attached the New Mexico Oil Conservation Division (OCD) correspondence related to the Modification Request below.

OCD placed a hard copy of the attached letter in the U.S. Mail today.

Please contact me if you have questions.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Thursday, December 13, 2018 5:21 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: [EXT] Navajo Refining WDW-4

Gentlemen,

Thank you for the comments and review of our WDW-4 report and logs. Navajo anticipates having the last of the requested information tomorrow (Friday 12/13) and will submit the responses to you then.

Navajo was hopeful that the review and approval to operate the well would have been completed by this time in our compliance calendar. We are under time pressure with two major holidays mixed in.

Navajo believes that it is prudent at this time to request an extension to the December 31, 2018 for GW-28 Section 1B and 4 to provide adequate time for:

- OCD to review the pending responses and approve operation of WDW-4
- Navajo adequate time to commence operation of WDW-4 and the Secondary Reverse Osmosis Unit
- Navajo adequate time to troubleshoot each of these systems

If the approval process can be completed here in December (next 2 weeks), Navajo is confident that we can commission the units in early January. Navajo proposes an additional month (January 31, 2019) with weekly progress updates to cease discharge of RO Reject to the Farm Fields. With the inclusion of weekly updates does a flexible deadline makes sense as WDW-4 has not yet been operated? There are still some unknowns.

I regret having to request an additional extension. Based on the timing for review and approval and trying to commission new equipment this late in the compliance calendar, Navajo thinks this is the best course of action.

I will be in the office tomorrow and am happy to discuss this further with you then.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

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State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



DECEMBER 14, 2018

**CERTIFIED MAIL
RETURN RECEIPT NO: 5995 4223**

Mr. Scott M. Denton
Environmental Manager
Navajo Refining, LLC
501 East Main
Artesia, New Mexico 88210

Re: Discharge Permit (GW-28) Navajo Refining, LLC, Modification Extension Request E-Mail of December 13, 2018, Eddy County, New Mexico

Mr. Denton,

The New Mexico Oil Conservation Division (OCD) is in receipt of the Navajo Refining, LLC (Navajo) Modification Extension Request E-mail dated December 13, 2018 requesting an extension to GW-28 Sections 1B and 4 deadlines below to January 31, 2019.

- Permit Section 1B (Scope of Permit) "Permitted Class I Disposal Well becomes available, but no later than December 31, 2018."
- Permit Section 4 (Discharge of Reverse Osmosis Reject Fluids) "The Permittee shall complete the well and pipeline no later than December 31, 2018."

After review of the request (see attachment) with explanation for delay, OCD has determined Navajo's Modification Request for an extension through January 31, 2019 is hereby **approved** for good cause.

If you have any questions, please do not hesitate to contact me by phone at (505) 476-3490, U.S. Mail at the address below, or e-mail at carlj.chavez@state.nm.us.

Sincerely,

Carl J. Chavez
Environmental Engineer

Attachment: [EXT] Navajo Refining WDW-4 E-mail December 13, 2018

xc: OCD Artesia District Office

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Thursday, December 13, 2018 5:21 PM
To: Chavez, Carl J, EMNRD
Cc: Griswold, Jim, EMNRD; Goetze, Phillip, EMNRD; Denton, Scott
Subject: [EXT] Navajo Refining WDW-4

Gentlemen,

Thank you for the comments and review of our WDW-4 report and logs. Navajo anticipates having the last of the requested information tomorrow (Friday 12/13) and will submit the responses to you then.

Navajo was hopeful that the review and approval to operate the well would have been completed by this time in our compliance calendar. We are under time pressure with two major holidays mixed in.

Navajo believes that it is prudent at this time to request an extension to the December 31, 2018 for GW-28 Section 1B and 4 to provide adequate time for:

- OCD to review the pending responses and approve operation of WDW-4
- Navajo adequate time to commence operation of WDW-4 and the Secondary Reverse Osmosis Unit
- Navajo adequate time to troubleshoot each of these systems

If the approval process can be completed here in December (next 2 weeks), Navajo is confident that we can commission the units in early January. Navajo proposes an additional month (January 31, 2019) with weekly progress updates to cease discharge of RO Reject to the Farm Fields. With the inclusion of weekly updates does a flexible deadline makes sense as WDW-4 has not yet been operated? There are still some unknowns.

I regret having to request an additional extension. Based on the timing for review and approval and trying to commission new equipment this late in the compliance calendar, Navajo thinks this is the best course of action.

I will be in the office tomorrow and am happy to discuss this further with you then.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, January 18, 2019 1:18 PM
To: Denton, Scott (Scott.Denton@HollyFrontier.com)
Cc: Griswold, Jim, EMNRD; Brancard, Bill, EMNRD
Subject: FW: 2018-12-17 GW-028 SRO and WDW-4 Notification
Attachments: 4 Unit 36-Large Control Diagram revised.pdf

Scott:

The New Mexico Oil Conservation Division (OCD) will include the attached "Attachment C" amendment(s) of January 4, 2019 to the Navajo Refining, LLC Notification of December 17, 2018 in the Administrative Record.

Attachment "C" was amended to remove all references to land surface discharges.

Please contact me if you have questions.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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From: Chavez, Carl J, EMNRD
Sent: Friday, January 4, 2019 12:08 PM
To: Brancard, Bill, EMNRD <bill.brancard@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Subject: FW: 2018-12-17 GW-028 SRO and WDW-4 Notification

FYI: Robert Combs submitted a corrected diagram that removes references to surface discharges to farm fields or 3-mile drain (see attachment).

I will amend the admin. record to replace Attachment C.

Thank you.

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Friday, January 4, 2019 12:04 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: [EXT] RE: 2018-12-17 GW-028 SRO and WDW-4 Notification

Carl,
Thanks for pointing out the error in the Attachment C to the submitted document. That was an oversight on my part and is not accurate of the SRO effluent. If you would, please accept this corrected figure to replace the submitted figure. If you have any questions or would like to discuss, please let us 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

From: Aguilar, Susie
Sent: Monday, December 17, 2018 4:13 PM
To: jim.griswold@state.nm.us
Cc: Holder, Mike; Denton, Scott; Combs, Robert; Dade, Lewis (Randy)
Subject: 2018-12-17 GW-028 SRO and WDW-4 Notification

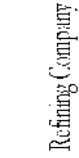
Submitted on behalf of Scott Denton. Hard copy mailed to addressee only.

Thank you,
Susie

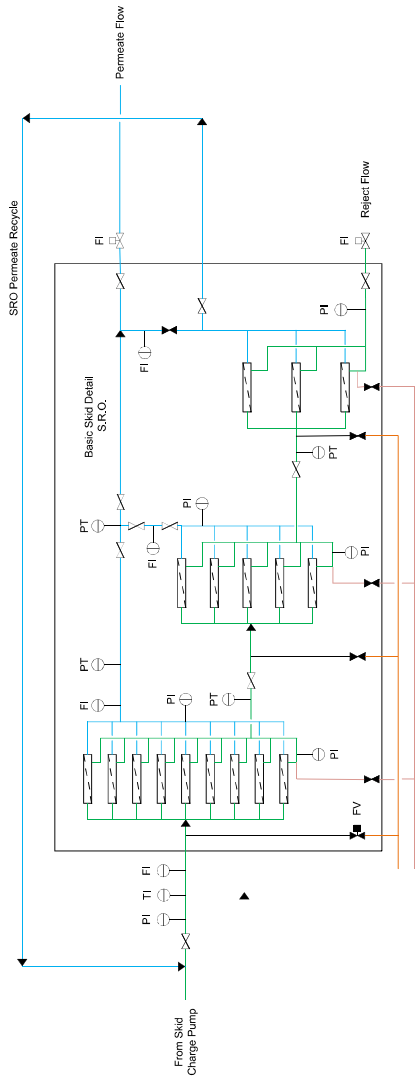
Susie Aguilar
Environmental Administrative Assistant, Lead
HollyFrontier Navajo Refining LLC
501 E. Main Street / P.O. Box 159
Artesia, NM 88210 / 88211-0159
Office: (575) 746-5488
Cell: (575) 703-4926
Fax: (575) 746-5451
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Refinery



LEGEND		Plant: HollyFrontier Corporation	
		Unit: 35 Reverse Osmosis	
		Rev 0	Rev 1
		JMT	JMT
		Date: 09/17	
		10/18	
Raw Water			
Permeate			
Reject Water			
Backwash Water			
Acid Gas Vent			
CIP Solution to Skid			
CIP Solution Return			

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, January 18, 2019 11:30 AM
To: Denton, Scott (Scott.Denton@HollyFrontier.com)
Cc: Holder, Mike (Mike.Holder@hollyfrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com); Dade, Lewis (Randy); Brancard, Bill, EMNRD; Griswold, Jim, EMNRD
Subject: RE: 2018-12-17 GW-028 SRO and WDW-4 Notification
Attachments: 2018-12-17 GW-028 SRO and WDW-4 Notification.pdf

Scott:

The New Mexico Oil Conservation Division (OCD) has completed its review of the attached "Notification Letter for Equipment Changes Associated with Secondary Reverse Osmosis (SRO) System and Discharge to Well WDW-4 HollyFrontier Navajo Refining LLC Discharge Permit (GW-028) Discharge Permits WDW-1, UICI-8-1; WDW-2, UICI-8-2; WDW-3, UICI-8-3; WDW-4, and UICI-8-4 letter dated December 17, 2018.

Navajo Refining, LLC (Navajo) is increasing the total volume of wastewater from the new Artesia Refinery SRO system, and this wastewater will continue to be properly disposed into its OCD Permitted UIC Class I (Non-hazardous) Disposal Well System (i.e., WDW-1, WDW-2, WDW-3 and WDW-4). Navajo has successfully eliminated the discharges to land surface at the two farm fields in accordance with the provisions of the OCD Discharge Permit; therefore, OCD does not regard the changes to be handled as a modification under the OCD Discharge Permit.

The HollyFrontier Navajo Refining, LLC SRO and WDW-4 Notification is hereby **approved** for good cause.

Regarding the current OCD Artesia Refinery Discharge Permit (GW-028) and applicable permit sections related to the above subject, please be advised of the following:

- 1) Section 4: The Permittee has complied with the requirements of Section 4;
- 2) Section 4A: The Permittee shall no longer discharge to land surface in accordance with Section 4A upon activation and operation of OCD Permitted WDW-4, and
- 3) Section 4B: The Permittee shall no longer sample and analyze RO Reject Fluids under Section 4B upon activation and operation of OCD Permitted WDW-4. The Permittee shall default to the sampling and analysis requirements of its OCD Permitted UIC Class I Disposal Well System Discharge Permits and/or as may be required by OCD for any other foreseeable or unforeseeable wastewater disposition changes from the Artesia Refinery (GW-028).

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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December 17, 2018

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

Certified Mail/Return Receipt

7015 0640 0006 6577 7173

RE: Notification Letter for Equipment Changes Associated with Secondary Reverse Osmosis System and Discharge to Well WDW-4
HollyFrontier Navajo Refining LLC
Discharge Permit GW-028
Discharge Permits WDW-1, UICI-8-1; WDW-2, UICI-8-2; WDW-3, UICI-8-3; WDW-4, UICI-8-4

Dear Mr. Chavez:

As previously discussed by phone on August 28, 2018, HollyFrontier Navajo Refining LLC (Navajo) is making changes to the reverse osmosis system commencing with the operation of WDW-4 and the cessation of land application of RO reject. The purpose of the modifications is to comply with requirement 1.B of Discharge Permit GW-028. This requires Navajo to stop discharging reverse osmosis (RO) reject fluids to the ground surface at the refinery at such time as injection capacity into a permitted Class I disposal well becomes available, as specified in the Permit.

Pursuant to Condition 1.G of Discharge Permits GW-028 and UICI-8-4, Navajo is required to notify the OCD of any facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants or volume. Navajo is hereby notifying OCD of the planned changes since the modifications will increase the wastewater effluent flow above previous levels.

Navajo currently operates an RO system to pre-treat fresh groundwater, either purchased from the City of Artesia or pumped from the Refinery's deep artesian wells, to be used as boiler feed water or cooling tower makeup water in the crude oil refining process. The RO system currently consists of three units. The primary system generates reject fluids that are authorized in Discharge Permit GW-28 to be applied to the fields/farms at the Refinery.

The refinery is planning to modify the current RO system by adding a secondary RO unit¹ that will treat the primary RO unit reject to produce more RO permeate and reduce the volume of

water to be disposed. The secondary RO permeate will be combined with other RO units' permeate for use at the refinery. The secondary RO reject will be inserted prior to the effluent pipeline pumps and discharged into the injection wells. In order to accommodate the increased flow² of the wastewater discharge to the wells once land application is ceased, a fourth well will be used, WDW-4. This disposal option was selected and provided in a notification letter to OCD submitted on October 21, 2016. The OCD issued Discharge Permit WDW-4 (UICI-8-4) for Class I non-hazardous waste injection well on December 14th, 2017. A simplified block flow diagram is provided in Attachment A and the location of the new equipment is shown in Attachment B. Process drawings for the SRO are included in Attachment C.

The modifications will increase the overall efficiency of the RO system, reduce fresh groundwater demand, and land application of the RO reject will be discontinued. Water quality changes due to the modifications will not cause the wastewater to exceed permitted levels, and will remain a non-hazardous, non-oilfield exempt waste.

Navajo appreciates the continued cooperation of the NM OCD. Should you have questions, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com.

Thank you for your assistance in this matter.

Sincerely,



Scott M. Denton
Environmental Manager
HollyFrontier Navajo Refining LLC

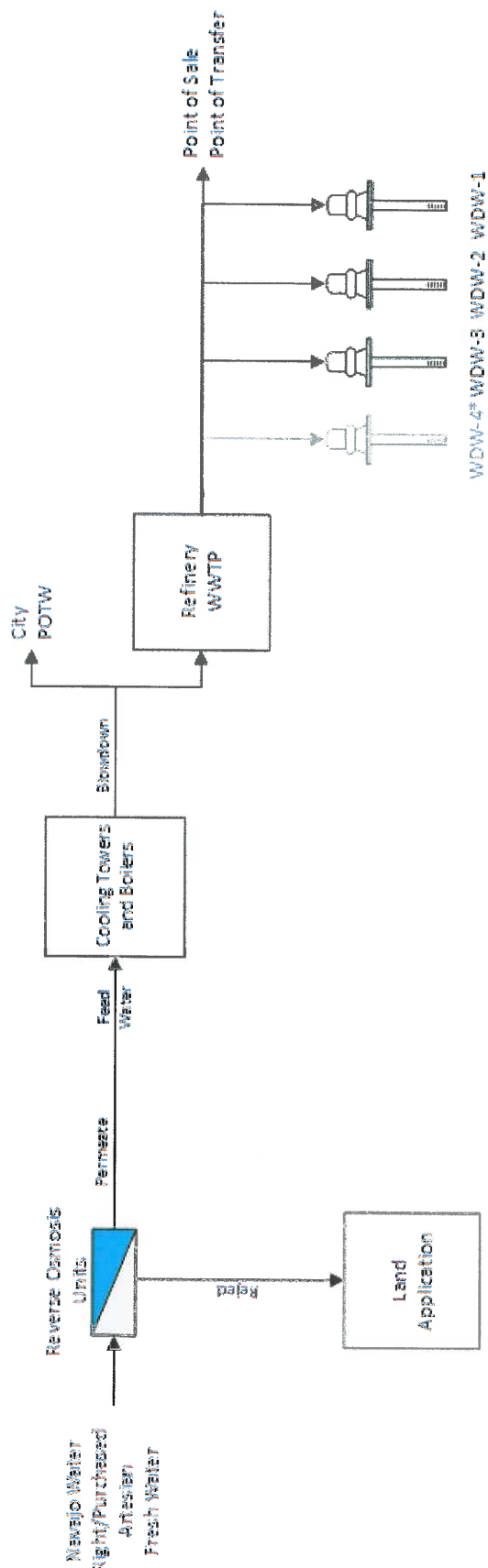
cc: OCD: J. Griswold
HollyFrontier: M. Holder, R. Combs, R. Dade

File Location: \\Env\\OCD\\GW-028 Permit\\2018 Notification - SRO & WDW-4

-
1. The concept of a secondary RO unit has been discussed with OCD since negotiations of the agreed compliance order (WQA-OCD-CO-2015-002), finalized April 27, 2015.
 2. Based on operational conditions the flow may be 100% of the primary RO reject or the reduced volume from the operation for the SRO unit.

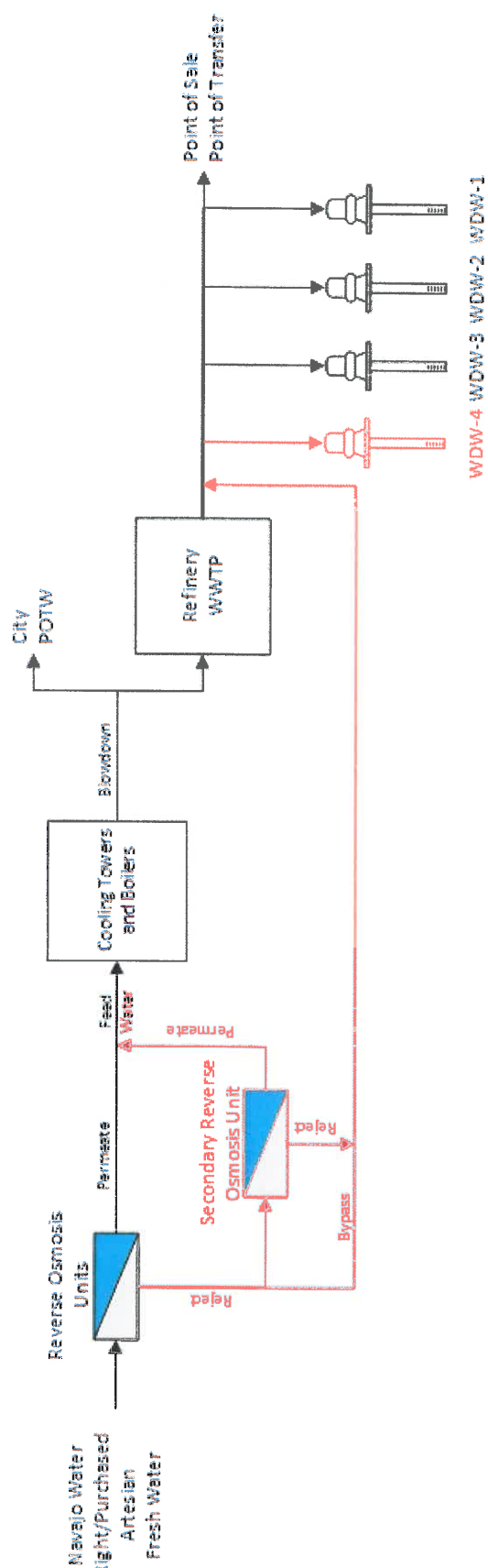
Attachment A
Process Schematic

Figure 1: Existing Wells Configuration

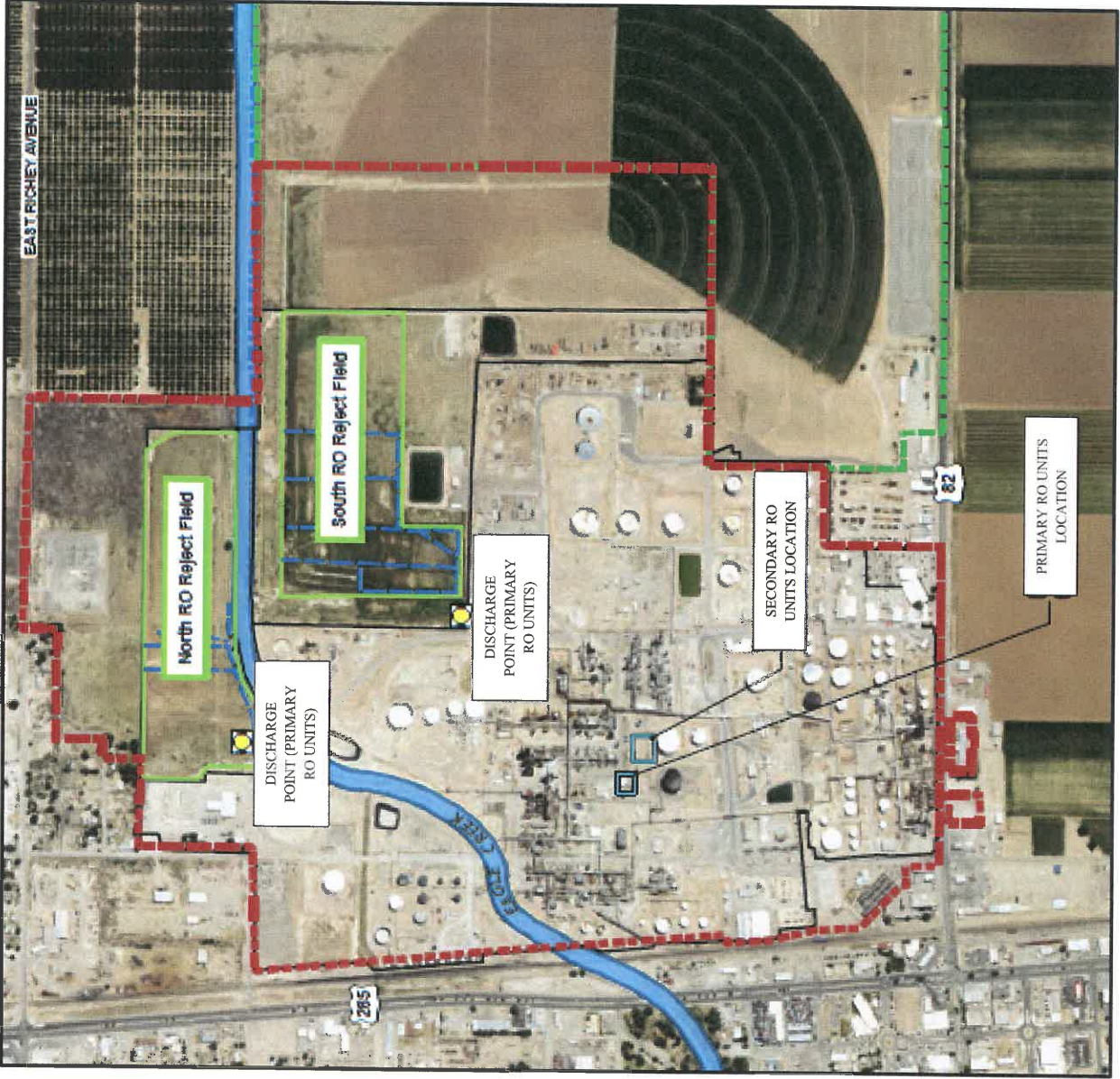


*Well constructed but not yet in service.

Figure 2: Modified Wells Configuration (modifications are shown in red)



Attachment B
Equipment Modifications Location

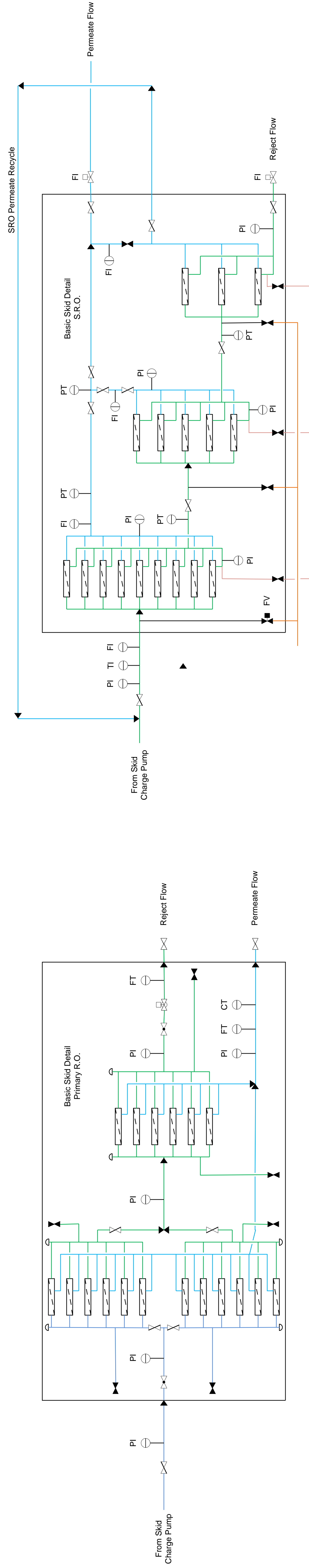
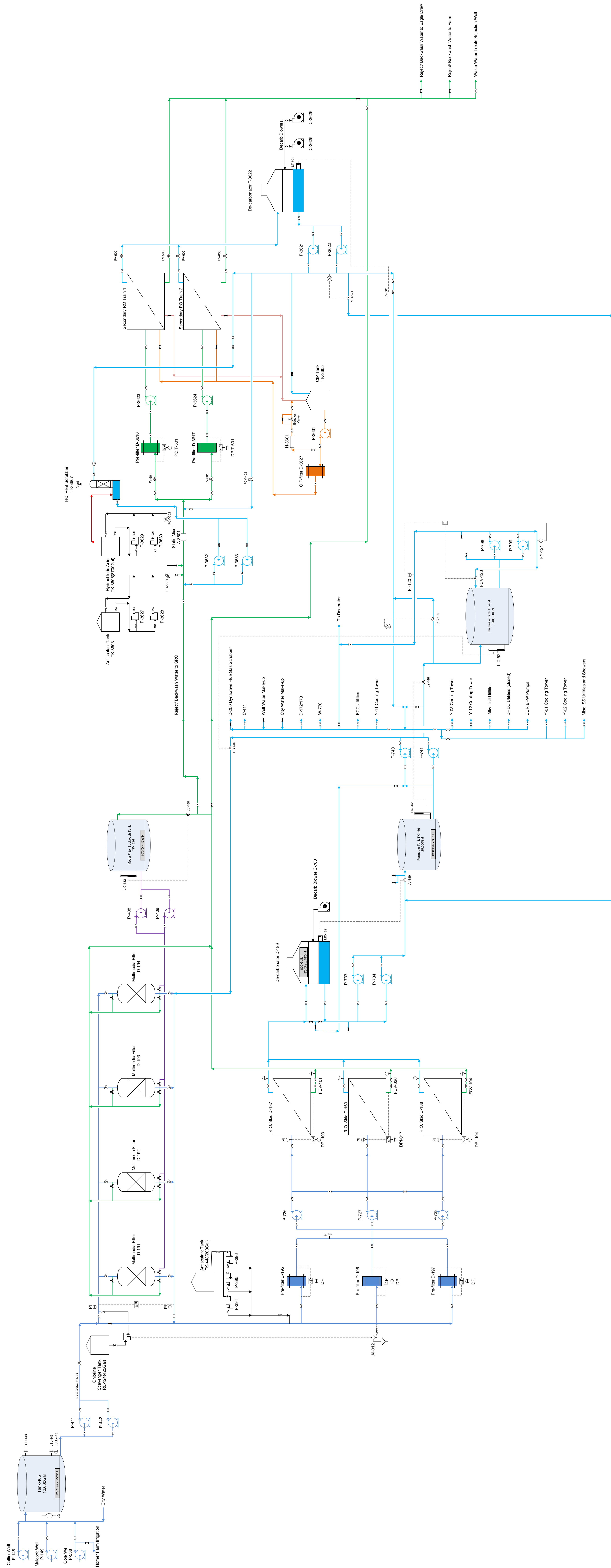









Attachment C

Secondary Reverse Osmosis Process Drawing



Artesia Refinery



LEGEND		Plant: HollyFrontier Corporation Unit: 36 Reverse Osmosis		
Raw Water		Rev 0	JVT	Date: 09/17
Permeate		Rev 1	JVT	10/18
Reject Water				
Backwash Water				
Acid Gas Vent				
CIP Solution to Skid				
CIP Solution Return				

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 10, 2017 3:05 PM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Griswold, Jim, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: HollyFrontier Navajo Refining, LLC Artesia Refinery (GW-028) Notification of Change of Discharge Location (7/21/17) and Closure Plan (7/21/17) Documents Communication Meeting

Gentlemen:

Please find below OCD's notes in red text based on the HollyFrontier Navajo Refining, LLC 7/21/17 submittals, and 8/9 telephone communication call. Carl agreed to submit notes to the parties to ensure we are proceeding according to the intent of the discharge permit. Action items are highlighted in yellow.

Meeting attendants, please feel free to add any of your comments for communication purposes.

Thank you.

Introduction

A Notification of Change to Discharge Location (HF 7/21/17 Document) *(approved by OCD)*

- 1) Phytoremediation Pilot Project (call it "feasibility project" instead) within South RO Reject Field (OCD location approval of 7/28) *(Ok)*
 - a. Phytoremediation Work Plan needed *(Scott Denton will address)*
 - b. Abatement Plan (AP) submittal (Pre-closure) *(AP in this instance is for stopping discharge in RO Reject Farm Fields. No DP modification required for phytoremediation project- JG.)*
 - c. Navajo's reference to past reports, i.e., RO Reject Field Reports, Background GW Report, etc. *(Permittee only mentioning for AP required within 60 days from cessation of discharge into RO farm fields per A2a.)*
 - i. To be included in AP submittal? *(May or likely be considered in A1c and A2c)*
 - ii. OCD will consider, but may require other COAs as needed to complete AP *(Same as A1c above)*

2) Abatement Plan Schedule

- a. OCD Modif. Approval of Submittal 60 days after cessation of discharge to RO Reject Field; *(No Modif. Required, but an AP is required at that time)*
- b. OCD Discharge Permit Modification of 6-29-17 *(Ok. OCD issued Admin. Modif.)*
- c. Confusion w/ Phyto-remediation Pilot Project and No. A1b above. *(Phyto-remediation project may factor into AP under A2a above depending on work plan end goals or criteria indicating it is a viable stand-alone abatement or complimentary abatement?)*

B Closure Plan (HF 7/21/2017 Document)

- 1) Phytoremediation Pilot (Abatement under DP)- AP Confusion *(See 2A1 above. This is a feasibility project that may become part of the AP 60 days after cessation of discharge to RO Reject farm fields)*

- a. AP Considerations in cost projection(s) needed now (*Address stoppage of discharge to RO Reject farm fields for now. The AP required 60 days after cessation of discharge will need to be addressed with that submittal*)
 - b. Closure Plan is different and costs may be projected now w/ modification as needed later (*Submit with AP due 60 days after cessation of discharge to RO Reject farm fields.*)
- 2) Navajo's reference to past reports, i.e., RO Reject Field Reports, Background GW Report, etc. assoc. w/ abatement (*Yes, this is to be expected*)
- a. Use in AP submittal A2a above. (*Yes*)
- 3) Abatement Plan Schedule
- a. OCD Modif. Approval of Submittal 60 days after cessation of discharge to RO Reject Fields (*OCD agrees per A2a*)
 - i. Use in cost estimates now (*Cost estimates may need to be adjusted later as more information becomes available and as per B3a*)
- 4) Detailed or itemized list of closure actions with cost estimates (*To be addressed*)
- 5) Financial Assurance (FA) Amount is too Low \$3K (Function of No. B4 above)
- a. What is basis for \$3K (*Estimated cost for ending discharge to RO Farm Fields per DP. More cost details are needed as basis for cost estimate.*)
 - b. FA needed now with modifications as needed (*FA submittal for final AP required separate from 5a above. On a separate note: Financial Assurance- FA for each UIC Class I (NH) Disposal well must be revisited and adjusted based on the effluent pipeline leading to each well for disposal, i.e., WDW-1 pipeline extends back to the refinery ~ 12 miles. Scott Denton will address.*)

Path Forward (*As described herein*)

Miscel.

- VOC plume capture system hypothetical: Injection stds. must meet the greater of WQCC water quality standards or background GW quality.
- How will OCD permit Class V remediation injection wells? Since facility is under WQCC DP, Permittee will be required to meet the technical requirements of OCD's UIC Program, i.e., C-108, Fed. Class V Well Form,...
- Gross hydrocarbon removal with GACs. Permittee currently not concerned with general chemistry constituents of concern. i.e., Cl, SO₄,... If water discharged to GW is of better quality then there should be no issues, but monitoring will be required to verify that discharge is better quality than existing GW at the discharge location.
- OSE Water Rights: Permittee discussed a year ago with OSE. If Permittee injects/removes gal/gal, no permit needed. No water rights issue(s) as Permittee has procured shallow GW leased rights (~ 80% plume reinjection/plume capture). About 20% may be reinjected outside of capture zone, but must meet diff. WQ stds. OCD is in discussions with NMED on this plume capture matter. OCD is thinking HF will soon be submitting final hydrogeologic pump test report with perhaps a work plan for extraction/injection wells to address dissolved phase plume migration, PSH, etc. OCD is in communication with NMED on the above. OCD and NMED both agree they need to seek further clarification from Permittee based on this topic and future plans of the Permittee.
- Lovington Refinery GW sampling event start date is Wed. instead of Thurs.
- WDW-4 Disposal Well: OCD UIC Class I Haz. Well Regulations still under review by EPA. EPA Attorneys left, and OCD/EPA Primacy issues still linger. EPA Reg. 6 now aware of situation and will be working with OCD Attys.

Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

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July 21, 2017

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

**RE: Discharge Permit GW-028
HollyFrontier Navajo Refining LLC, Artesia Refinery
Notification of Change to the Reverse Osmosis Fluids Discharge Location**

Dear Sirs:

The HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico Refinery (the Refinery) currently operates a reverse osmosis (RO) system to pre-treat fresh groundwater, either purchased from the City of Artesia or produced from the Refinery's deep artesian wells, to be used as boiler feed water or cooling tower makeup water in the crude oil refining process. The RO system generates reject fluids that are currently authorized per Condition 1.B of Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD) on May 25, 2017, and modified on June 29, 2017 (the Discharge Permit), to be discharged to the ground surface at two on-site approved locations (North RO Reject Field and South RO Reject Field).

Pursuant to Condition 1.G of the Discharge Permit, Navajo is required to notify the OCD of any facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants. Though this planned discharge location ~~modification~~ will not change the quality or increase the quantity of the RO discharge to the current RO Reject Fields above permitted levels, Navajo is hereby notifying OCD of a planned modification to the discharge location at the South RO Reject Field.

The Refinery plans to initiate a phytoremediation pilot study at the South RO Reject Field and, as a result, proposes to modify the discharge location at the South RO Reject Field. The new discharge locations are shown on the figures provided in Attachments 1 and 2. The relocated discharge locations are strategically placed to allow for diverting and metering the RO fluids into the phytoremediation test plot, as well as directing the remainder of the RO fluid discharge volume onto the South RO Reject Field beyond the extents of the phytoremediation test plot. The existing South RO Reject Field discharge location will be taken out of service for the duration of the pilot study.

As authorized in Condition 1.B and Condition 4 of the Discharge Permit, discharge of RO reject fluids to the ground surface at the North RO Reject Field and South RO Reject Field will continue until the planned Class I disposal well is operational, but no later than October 31, 2018. After discharge to the RO Reject Fields ceases, a plan for characterization and abatement of potential vadose zone and groundwater impacts will be developed in accordance with Condition 6 of the Discharge Permit. The purpose of the phytoremediation pilot study is to evaluate phytoremediation as a viable option for abatement of potential impacts to the vadose zone and groundwater at the RO Reject Fields. Conducting the pilot study while RO fluids are still being applied to the ground surface is advantageous in that Navajo can avoid re-opening closed discharge lines to allow for irrigation during the study.

The phytoremediation pilot study test plot is approximately 1.25 acres of the South RO Reject Field and is shown on the figure provided in Attachment 3. Sudan grass and/or other plant species will be planted in the test plot and the uptake of key constituents by the plants will be assessed. The test plot will be irrigated with RO reject fluid that will be metered in order to calculate the mass of chemicals applied. The phytoremediation pilot study contractor reports that Sudan grass (as an example plant) uptakes approximately 7 to 11 acre-inches of water per month, which equates to 5.5 to 8.5 gallons per minute (gpm) across the 1.25 acre pilot study test plot. Therefore, the North RO Reject Field and the remaining portion of the South RO Reject Field will continue to be used during the pilot study to manage the remainder of the average daily RO fluid discharge volume.

Samples will be collected from the RO reject fluid discharge stream, plants, soil, vadose zone water, and groundwater during the pilot test to develop a system mass balance for key constituents (e.g., cations, anions, and total dissolved solids). Three lysimeters will be installed in the phytoremediation pilot study test plot to monitor the shallow groundwater (i.e., vadose zone) chemical concentrations, and existing monitoring well MW-114 will be sampled to monitor the groundwater constituent concentrations. Planned sampling locations are shown in the figure provided in Attachment 3. The resulting mass balances (mass applied vs. mass harvested) will allow the Refinery to determine the fraction of key constituents that are absorbed by the plants relative to the mass of constituents introduced by the RO reject fluids. The Refinery is targeting August 1, 2017, as the completion date for preparing the pilot study test plot and moving the South RO Reject Field discharge location, pending approval from OCD.

Navajo is committed to working cooperatively with OCD regarding this modification to the permitted RO process. If you have any questions or comments, please do not hesitate to contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

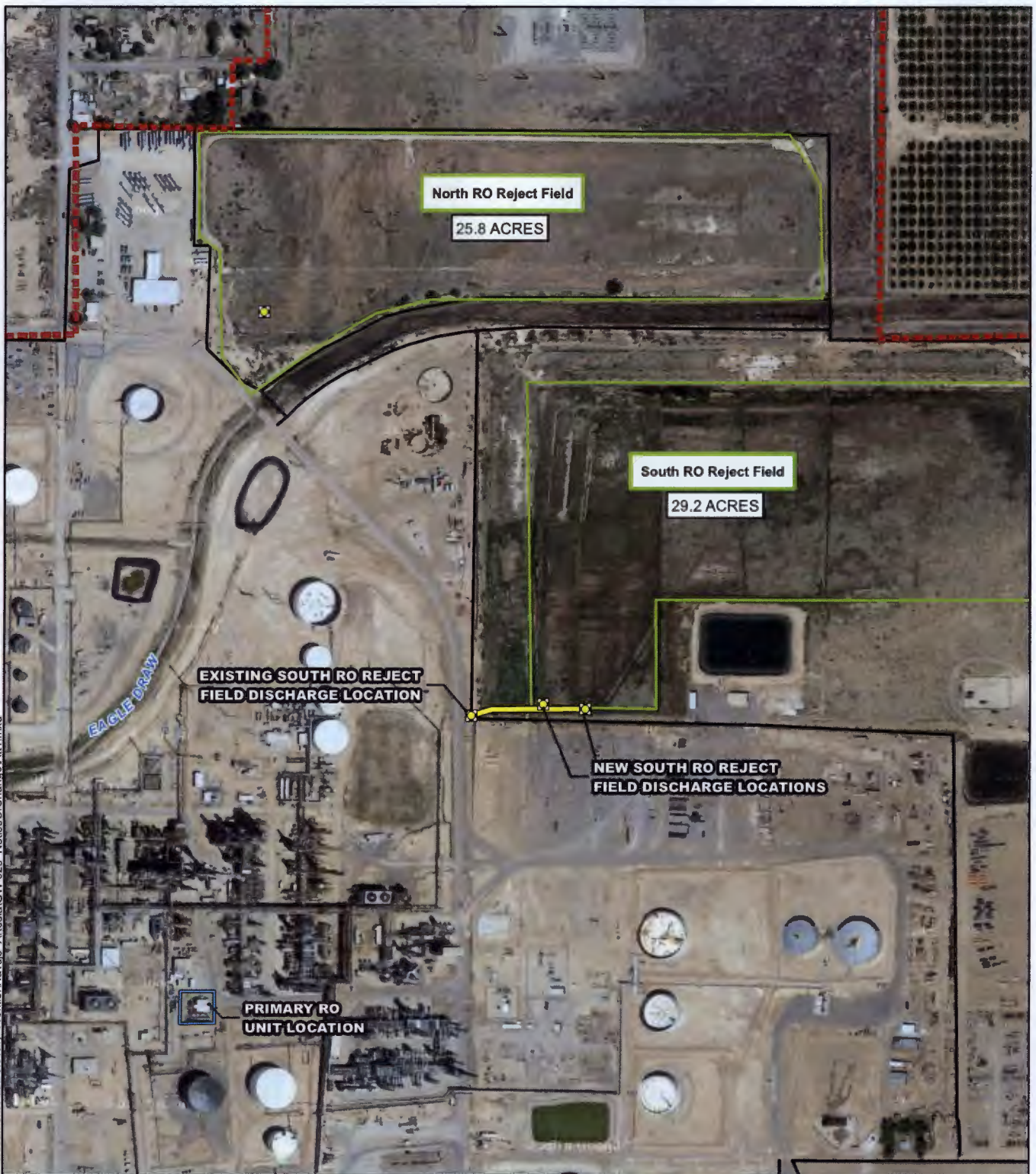
Attachment 1: South RO Reject Field Discharge Location
Attachment 2: South RO Reject Field Discharge Location Detail
Attachment 3: Phytoremediation Project Map and Details

cc. HFC: D. McWatters, R. O'Brien, M. Holder, A. Sahba
OCD: A. Marks, B. Brancard







File Location: Env\OCD\GW-028 Permit\2017 Notification - Discharge Location

Attachment 1
South RO Reject Field Discharge Location

Document Path: J:\Holly Frontier\Navajo Artesia\GW-028 NoticeOfChange\ATT1.mxd



LEGEND

-  PRIMARY RO UNIT LOCATION
-  RO FLUIDS DISCHARGE POINT
-  NAVAJO REFINING PROPERTY
-  PIPELINE
-  RO FLUIDS DISCHARGE FIELD
-  REFINERY FENCELINE



SOUTH RO REJECT FIELD DISCHARGE LOCATION

Notification of Change to Reverse Osmosis Fluids Discharge Location
HollyFrontier Navajo Refining LLC
Artesia Refinery, Eddy County, New Mexico

PROJECT NUMBER: 283301

FILE NAME: ATT1

AUTHOR: MLOVELACE

DATE: 7/20/2017



505 E. HUNTLAND DR.
SUITE 250
AUSTIN, TX 78752
PH: 512-329-6080






ATTACHMENT

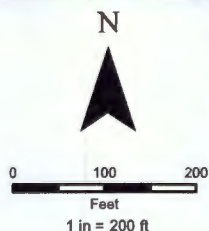
1

Attachment 2
South RO Reject Field Discharge Location Detail



LEGEND

-  RO FLUIDS DISCHARGE POINT
-  NAVAJO REFINING PROPERTY
-  PIPELINE
-  RO FLUIDS DISCHARGE FIELD
-  REFINERY FENCELINE



SOUTH RO REJECT FIELD DISCHARGE LOCATION DETAIL

Notification of Change to Reverse Osmosis Fluids Discharge Location
HollyFrontier Navajo Refining LLC
Artesia Refinery, Eddy County, New Mexico

PROJECT NUMBER: 283301

FILE NAME: AIR2

AUTHOR: MLOVELACE

DATE: 7/17/2017



505 E. HUNTLAND DR.
SUITE 250
AUSTIN, TX 78752
PH: 512-329-6080

ATTACHMENT

2

Attachment 3
Phytoremediation Project Map and Details
(provided by Geolex, Incorporated)



Explanation

- ★ RO Reject Water Outflow Point
- ⊕ Potential Lysimeter Locations
- Soil Sample
- ▲ RO Water To S. Field
- ▲ RO Water to Pilot Plot
- Soil/Swale Berm
- ⤵ Diverter Valve
- Additional Pipe to Diverter Valve
- Path to Lysimeter
- Approximate Pipeline Locations
- RO Reject Water Canals
- ⊕ Existing Monitor Wells
- Pilot Plot

Map showing location of Pilot Plot for phyto remediation project. Lysimeters are strategically placed to measure constituents in the soil and near surface groundwater. Soil samples will be collected at the start and end of project. The Soil/Swale Berms will be used to contain the RO reject water to the Pilot Plot. Additional piping may be used to control flow to diverter valve. Diverter valve will be alternated to water the Pilot Plot or water the South RO Reject Field away from the Pilot Plot. A cleared path will be needed to access lysimeter in the center of the control plot. One lysimeter will be placed off of the pilot plot to ensure quality of results from the Pilot Plot. A flow meter will need to be installed at the outflow point or at the diverter valve.

**PHYTOREMEDIATION
PROJECT MAP AND
DETAILS**

Map Date: 5/19/2017

GEOLEX
INCORPORATED

HOLLYFRONTIER

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 10, 2017 3:05 PM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Griswold, Jim, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: HollyFrontier Navajo Refining, LLC Artesia Refinery (GW-028) Notification of Change of Discharge Location (7/21/17) and Closure Plan (7/21/17) Documents Communication Meeting

Gentlemen:

Please find below OCD's notes in red text based on the HollyFrontier Navajo Refining, LLC 7/21/17 submittals, and 8/9 telephone communication call. Carl agreed to submit notes to the parties to ensure we are proceeding according to the intent of the discharge permit. Action items are highlighted in yellow.

Meeting attendants, please feel free to add any of your comments for communication purposes.

Thank you.

Introduction

A Notification of Change to Discharge Location (HF 7/21/17 Document) *(approved by OCD)*

- 1) Phytoremediation Pilot Project (call it "feasibility project" instead) within South RO Reject Field (OCD location approval of 7/28) *(Ok)*
 - a. Phytoremediation Work Plan needed *(Scott Denton will address)*
 - b. Abatement Plan (AP) submittal (Pre-closure) *(AP in this instance is for stopping discharge in RO Reject Farm Fields. No DP modification required for phytoremediation project- JG.)*
 - c. Navajo's reference to past reports, i.e., RO Reject Field Reports, Background GW Report, etc. *(Permittee only mentioning for AP required within 60 days from cessation of discharge into RO farm fields per A2a.)*
 - i. To be included in AP submittal? *(May or likely be considered in A1c and A2c)*
 - ii. OCD will consider, but may require other COAs as needed to complete AP *(Same as A1c above)*

2) Abatement Plan Schedule

- a. OCD Modif. Approval of Submittal 60 days after cessation of discharge to RO Reject Fields *(No Modif. Required, but an AP is required at that time)*
- b. OCD Discharge Permit Modification of 6-29-17 *(Ok. OCD issued Admin. Modif.)*
- c. Confusion w/ Phyto-remediation Pilot Project and No. A1b above. *(Phyto-remediation project may factor into AP under A2a above depending on work plan end goals or criteria indicating it is a viable stand-alone abatement or complimentary abatement?)*

B Closure Plan (HF 7/21/2017 Document)

- 1) Phytoremediation Pilot (Abatement under DP)- AP Confusion *(See 2A1 above. This is a feasibility project that may become part of the AP 60 days after cessation of discharge to RO Reject farm fields)*

- a. AP Considerations in cost projection(s) needed now *(Address stoppage of discharge to RO Reject farm fields for now. The AP required 60 days after cessation of discharge will need to be addressed with that submittal)*
 - b. Closure Plan is different and costs may be projected now w/ modification as needed later *(Submit with AP due 60 days after cessation of discharge to RO Reject farm fields.)*
- 2) Navajo's reference to past reports, i.e., RO Reject Field Reports, Background GW Report, etc. assoc. w/ abatement *(Yes, this is to be expected)*
- a. Use in AP submittal A2a above. *(Yes)*
- 3) Abatement Plan Schedule
- a. OCD Modif. Approval of Submittal 60 days after cessation of discharge to RO Reject Fields *(OCD agrees per A2a)*
 - i. Use in cost estimates now *(Cost estimates may need to be adjusted later as more information becomes available and as per B3a)*
- 4) Detailed or itemized list of closure actions with cost estimates *(To be addressed)*
- 5) Financial Assurance (FA) Amount is too Low \$3K (Function of No. B4 above)
- a. What is basis for \$3K *(Estimated cost for ending discharge to RO Farm Fields per DP. More cost details are needed as basis for cost estimate.)*
 - b. FA needed now with modifications as needed *(FA submittal for final AP required separate from 5a above. On a separate note: Financial Assurance- FA for each UIC Class I (NH) Disposal well must be revisited and adjusted based on the effluent pipeline leading to each well for disposal, i.e., WDW-I pipeline extends back to the refinery ~ 12 miles. Scott Denton will address.)*

Path Forward *(As described herein)*

Miscel.

- VOC plume capture system hypothetical: Injection stds. must meet the greater of WQCC water quality standards or background GW quality.
- How will OCD permit Class V remediation injection wells? Since facility is under WQCC DP, Permittee will be required to meet the technical requirements of OCD's UIC Program, i.e., C-108, Fed. Class V Well Form,...
- Gross hydrocarbon removal with GACs. Permittee currently not concerned with general chemistry constituents of concern. i.e., Cl, SO₄,... If water discharged to GW is of better quality then there should be no issues, but monitoring will be required to verify that discharge is better quality than existing GW at the discharge location.
- OSE Water Rights: Permittee discussed a year ago with OSE. If Permittee injects/removes gal/gal, no permit needed. No water rights issue(s) as Permittee has procured shallow GW leased rights (~ 80% plume reinjection/plume capture). About 20% may be reinjected outside of capture zone, but must meet diff. WQ stds. OCD is in discussions with NMED on this plume capture matter. OCD is thinking HF will soon be submitting final hydrogeologic pump test report with perhaps a work plan for extraction/injection wells to address dissolved phase plume migration, PSH, etc. OCD is in communication with NMED on the above. OCD and NMED both agree they need to seek further clarification from Permittee based on this topic and future plans of the Permittee.
- Lovington Refinery GW sampling event start date is Wed. instead of Thurs.
- WDW-4 Disposal Well: OCD UIC Class I Haz. Well Regulations still under review by EPA. EPA Attorneys left, and OCD/EPA Primacy issues still linger. EPA Reg. 6 now aware of situation and will be working with OCD Attys.

Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)



July 21, 2017

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

**RE: Closure Plan
Discharge Permit GW-028
HollyFrontier Navajo Refining LLC**

Dear Sirs:

Pursuant to Condition 1.I of Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD) on May 25, 2017, and modified on June 29, 2017 (the Discharge Permit), HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico Refinery (the Refinery) hereby submits this Closure Plan relevant to the reverse osmosis (RO) discharge permitted under the Discharge Permit. Financial assurance to complete closure activities will be achieved by maintenance of a bond. This letter and all attachments provided herein constitute the Closure Plan required by the Discharge Permit and by 20.6.2.3107A.(11) New Mexico Administrative Code (NMAC).

A site location map of the Refinery is included as Attachment 1. Per Condition 4 of the Discharge Permit, the Refinery is currently authorized to discharge RO fluids to the ground at two on-site approved locations (North RO Reject Field and South RO Reject Field) as shown on Attachment 2. Note that the Refinery has proposed changing the South RO Reject Field discharge location (see Attachment 2) from the discharge location shown in the GW-028 Permit Renewal and Modification Application submitted on June 23, 2016, as the result of a phytoremediation pilot study described in the notification submitted to the OCD on July 21, 2017.

As authorized in Condition 1.B and Condition 4 of the Discharge Permit, surface discharge of RO fluids to the North RO Reject Field and South RO Reject Field will continue until injection capacity into the permitted Class I disposal well becomes available. After the Class I disposal well becomes operational and ground surface discharge ceases, and in accordance with Condition 1.I of the Discharge Permit and 20.6.2.3107A.(11) NMAC, the Refinery will install blind flanges on all RO fluid discharge lines to eliminate future discharges to the ground surface. The location of the proposed RO fluid discharge line blind flanges are presented in Attachment 3.

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

The cost estimate to install blind flanges on all RO fluid discharge lines is \$3,000 in 2017 dollars. The closure cost estimate is based on engineering and contractor estimates of the anticipated work to be completed. Financial assurance for the estimated costs to complete closure activities will be achieved by maintenance of a bond, which will be obtained and provided to OCD upon OCD's approval of this Closure Plan.

Condition 6 of the Discharge Permit requires Navajo to submit a plan for characterization and abatement of vadose zone and groundwater contamination associated with the discharge of RO reject fluids within 60 days of the cessation of discharge of RO reject fluids to the ground surface. Navajo has completed investigations of the RO fields as documented in the *Reverse Osmosis Reject Water Discharge Fields Investigation Final Report* submitted to the OCD in February 2014, the *Background Groundwater Investigation Report* submitted to the OCD in September 2015, and the *Reverse Osmosis Reject Water Discharge Fields Investigation Final Report – Revised* submitted to the OCD in December 2015, all of which are pending OCD review and approval. This Closure Plan may be modified as necessary when application of RO fluids ceases, the background study is approved, and/or applicable clean-up standards have been established.

Navajo is committed to working cooperatively with OCD to facilitate its review of this Closure Plan. If you have any questions or comments, please do not hesitate to contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

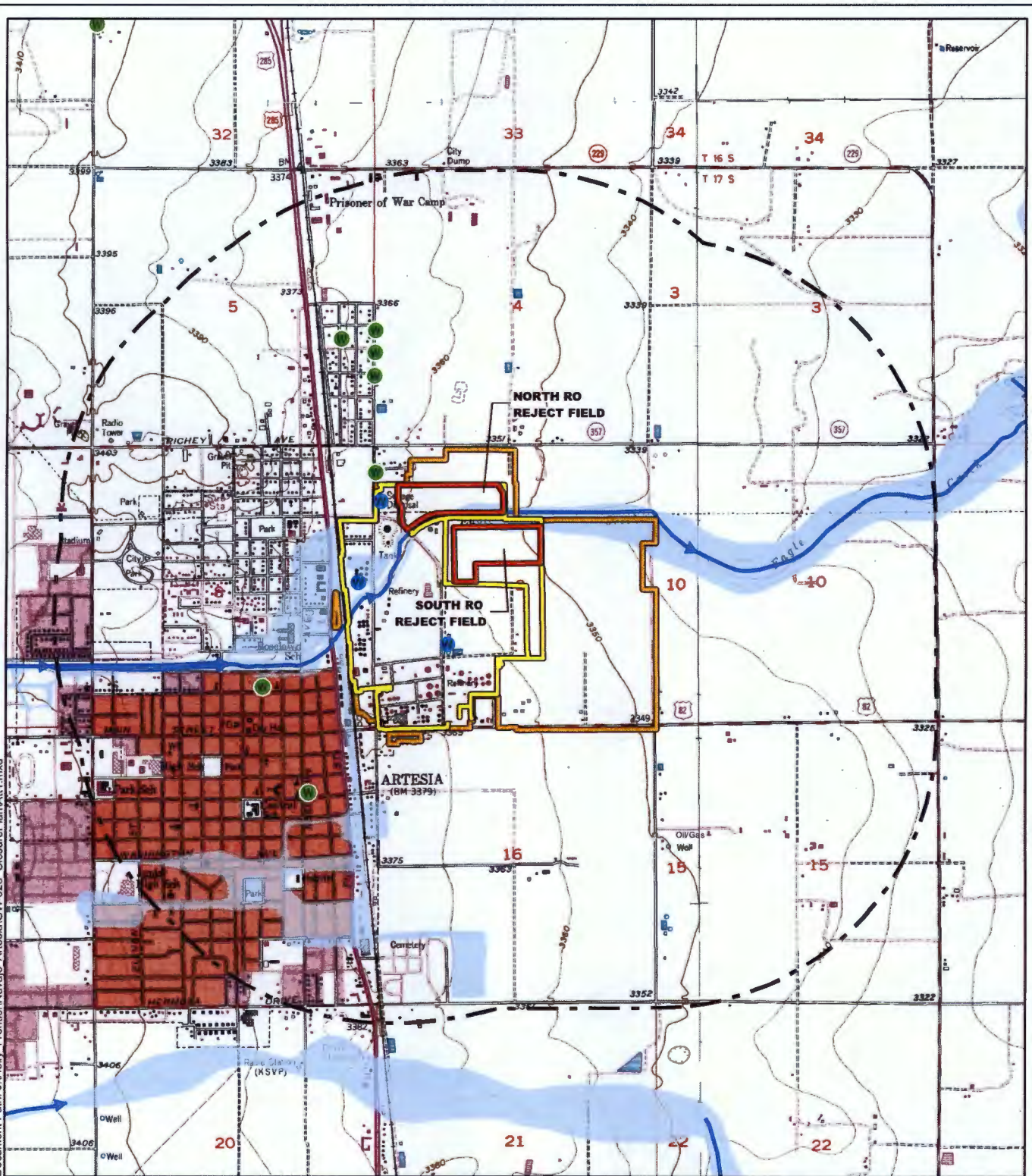
- Attachment 1: Site Location Map
- Attachment 2: RO Fluid Discharge Locations
- Attachment 3: RO Fluid Discharge Line Blind Flange Locations

cc. HFC: D. McWatters, R. O'Brien, M. Holder, A. Sahba
OCD: A. Marks, B. Brancard

File Location: Env\OCD\GW-028 Permit\2017 Closure Plan and Financial Assurance

Attachment 1
Site Location Map

Document Path: J:\Holly Frontier\Navajo Artesia\GW-028 ClosurePlanAtt1.mxd



LEGEND

- NAVAJO WATER SUPPLY WELL
- WATER SUPPLY WELL
- 1 MILE DISTANCE PROPERTY BOUNDARY
- RO REJECT WATER DISCHARGE FIELD
- REFINERY FENCELINE
- PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- SURFACE WATER FEATURE (INTERMITTENT)
- 100-YEAR FLOODPLAIN (1% ANNUAL CHANCE OF FLOODING)

SOURCES:
U.S.G.S ARTESIA AND SPRING LAKE, NM 7.5 MINUTE TOPOGRAPHIC MAPS; NATIONAL HYDROLOGIC DATASET; NEW MEXICO ENVIRONMENT DEPARTMENT

N

0 0.25 0.5
Miles
1 in = 0.5 miles

SITE LOCATION MAP

GW-028 Closure Plan
HollyFrontier Navajo Refining LLC
Artesia Refinery, Eddy County, New Mexico

Project Number:
Author: MLOVELACE

MXD: Att1
Date: 7/13/2017



505 E. HUNTLAND DR.
SUITE 250
AUSTIN, TX 78752
(512) 329-6080






ATTACHMENT
1

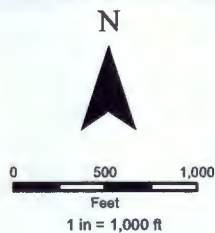
Attachment 2
RO Fluid Discharge Locations

Document Path: J:\Holly Frontier\Navajo Artesia\GW-028 Closure\Plan\A12.mxd



LEGEND

-  PRIMARY RO UNIT LOCATION
-  RO FLUIDS DISCHARGE POINT
-  NAVAJO REFINING PROPERTY
-  RO FLUIDS DISCHARGE FIELD
-  REFINERY FENCELINE



RO FLUID DISCHARGE LOCATIONS

GW-028 Closure Plan
HollyFrontier Navajo Refining LLC
Artesia Refinery, Eddy County, New Mexico

PROJECT NUMBER: 283301

FILE NAME: A12

AUTHOR: MLOVELACE

DATE: 7/17/2017

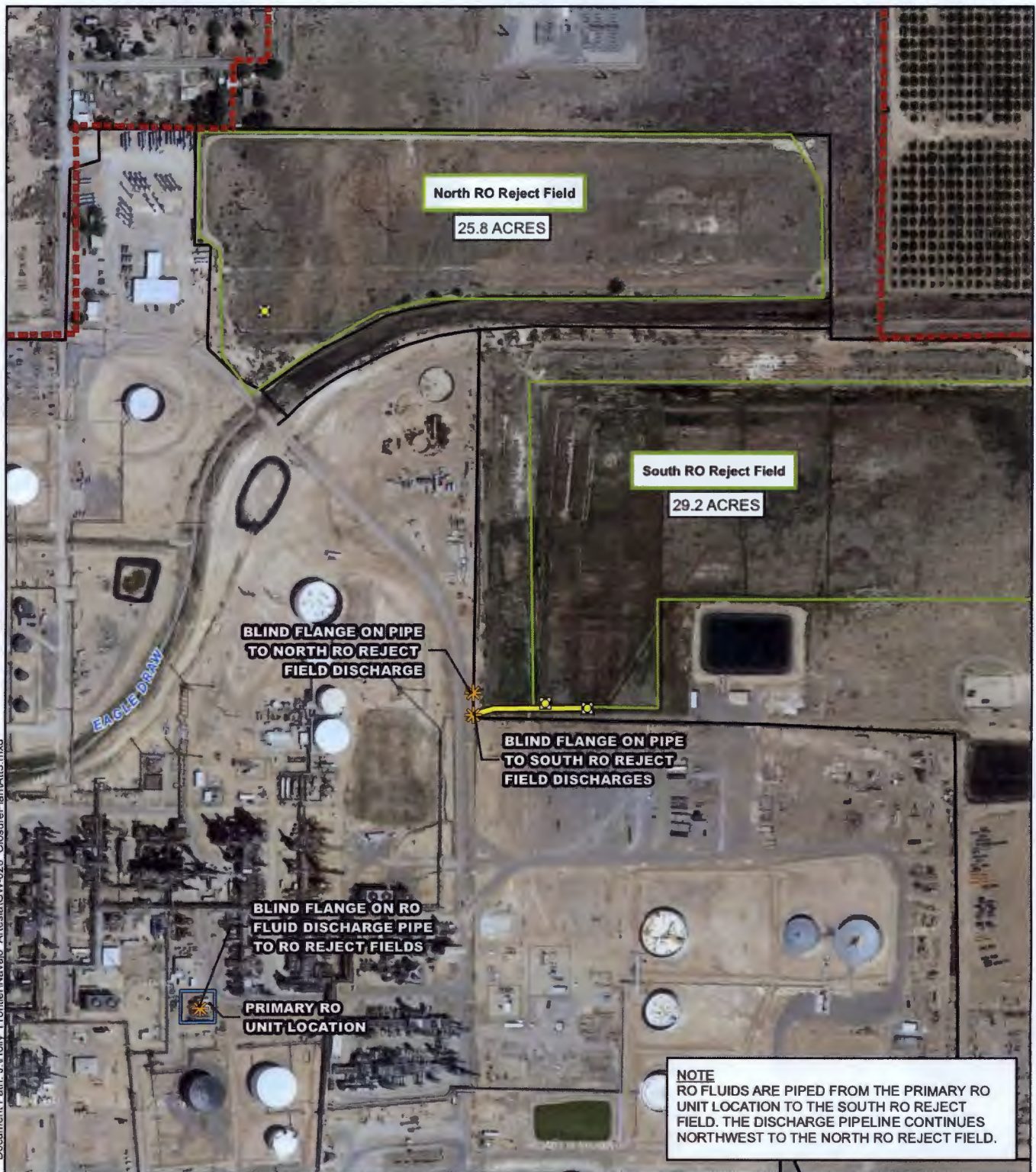


505 E. HUNTLAND DR.
SUITE 250
AUSTIN, TX 78752
PH: 512-329-6080








ATTACHMENT

2

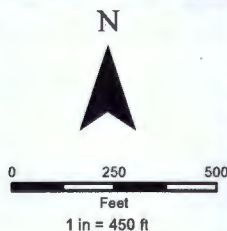
Attachment 3
RO Fluid Discharge Line Blind Flange Locations



LEGEND

-  BLIND FLANGE TO BE INSTALLED
-  PRIMARY RO UNIT LOCATION
-  RO FLUIDS DISCHARGE POINT
-  NAVAJO REFINING PROPERTY
-  PIPELINE
-  RO FLUIDS DISCHARGE FIELD
-  REFINERY FENCELINE

SOURCE: ARCADIS US INC. ESRI AND THEIR DATA PARTNERS



RO FLUID DISCHARGE LINE BLIND FLANGE LOCATIONS

GW-028 Closure Plan
HollyFrontier Navajo Refining LLC
Artesia Refinery, Eddy County, New Mexico

PROJECT NUMBER: 283301

FILE NAME: A13

AUTHOR: MLOVELACE

DATE: 7/20/2017



505 E. HUNTLAND DR.
SUITE 250
AUSTIN, TX 78752
PH: 512-329-6080

ATTACHMENT

3

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division



JUNE 21, 2017

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

**Re: Discharge Permit (GW-028) Artesia Refinery
HollyFrontier Navajo Refining LLC
ACO WQA-OCD-CO-2015-002 Termination of RO Reject Water Discharge
Monthly Reporting Requirement
Eddy County, New Mexico**

Mr. Denton:

The New Mexico Oil Conservation Division (OCD) is writing to inform HollyFrontier Navajo Refining, LLC (Navajo) the Permittee that monthly reporting under the above subject ACO is hereby terminated effective May 25, 2017, the date of discharge permit reissuance by OCD.

Navajo has successfully complied with the monthly reporting requirements of the OCD issued ACO.

If you have any questions, please do not hesitate to contact Carl Chavez of my Staff at (505) 476-3490, mail at the address below, or email at CarlJ.Chavez@state.nm.us. On behalf of the OCD, I wish to thank you and your staff for your cooperation in meeting the requirements of the above subject ACO.

Sincerely,

Jim Griswold
Environmental Bureau Chief

cc: OCD Artesia Office

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, April 21, 2017 8:45 AM
To: Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Griswold, Jim, EMNRD
Subject: FW: Artesia Refinery (GW-28) 2015 Effluent Pipeline Release Follow-up

Robert:

Re: Pipeline Releases 2015 and 2016

Good morning. OCD is following up on C-141 Final submittals for the pipeline releases South of the evaporation ponds west of the Pecos River.

The communique below was the last OCD msg. sent to Navajo regarding the 2015 release. Later in 2016 there was another release.

OCD is requesting an update on releases within the next two weeks or on or before May 5, 2017.

Thank you.

From: Chavez, Carl J, EMNRD
Sent: Tuesday, November 15, 2016 3:19 PM
To: Combs, Robert (Robert.Combs@hollyfrontier.com) <Robert.Combs@hollyfrontier.com>
Cc: Holder, Mike (Michael.Holder@hollyfrontier.com) <Michael.Holder@hollyfrontier.com>; Denton, Scott (Scott.Denton@HollyFrontier.com) <Scott.Denton@HollyFrontier.com>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Subject: Artesia Refinery (GW-28) 2015 Effluent Pipeline Release

Robert, et al.:

Good afternoon. The New Mexico Oil Conservation Division (OCD) has re-evaluated the release information from the July 27, 2016 Investigation Report, subsequent to the telephone communication call on Nov. 9th. OCD comments and requirements are provided below based on a review of information to date.

OCD comments:

- 1) The water table is less than 10 ft. bgl and the release location is within the Pecos River Flood Plain Watershed area.
- 2) The soil removed to repair the line is estimated to be 50-60 cubic yards, and were not sampled for waste determination because HF was not convinced that the removed soils were actually waste. The excavated soils are stockpiled on land surface, and clean fill was used to backfill the excavation area.
- 3) Two soil borings were advanced (TMW-WWL1 and TMW-WWL2) in areas believed to have been unimpacted by the pipeline release with soil samples taken at depths of 1, 6 and 12 feet bgs in each boring. The 12 foot samples would have been in the capillary fringe or saturated zone. Those soil samples were analyzed for the constituents provided in Table 2. These "background" soils appear

elevated in iron and sulfate, at a minimum. No sampling was done upon the 50 to 60 yards of excavated soils and no sampling was done on the sides or at the base of the excavation.

- 4) The approach used on this 2015 effluent line release appears to be what is also needed on 2016 effluent pipeline release; however, OCD requires sampling along the sidewalls and base of excavations in order to verify soil remediation is acceptable, and the waste must also be sampled for a waste determination. Consequently, HF must not re-empale excavated soils back into the excavation until the analytical data is reviewed and a determination is made by OCD.
- 5) OCD generally relies on soil screening limits DAF1 and DAF20 for evaluation of soil contamination and protection of groundwater when and where feasible. Establishment of background soil quality does simplify the final cleanup criteria for parameters lacking a DAF1 or DAF20.
- 6) For soil reuse proposals related to the effluent pipeline, submittals to OCD is in order. OCD will likely use a similar approach as the NMED for final determination.

OCD requirements:

- 1) OCD requires that the excavated soils be sampled and similarly analyzed for the constituents in Table 2. OCD requires at least 3 discrete grab samples (no composites), one sample for every ~20 yards of material. Environmental analyses shall consist of Organics by Method 8260 full list; Method 8015 extended range; Iron and Manganese by Method 6010; along with Chloride, Fluoride, and Sulfate by Method 300. If the excavation is still open, a sample from the base of excavation should also be collected and analyzed.
- 2) HF shall submit the environmental analytical data with QA/QC to OCD to compare with the background information to decide on the next step (if any) on or before **December 31, 2016**.
- 3) HF shall follow EPA QA/QC and DQOs for all field and laboratory work.

Please contact me if you have questions. Thank you.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, March 28, 2017 11:26 AM
To: Denton, Scott (Scott.Denton@HollyFrontier.com)
Cc: Griswold, Jim, EMNRD
Subject: FW: Navajo Refining Company (GW-28)

Scott:

The New Mexico Oil Conservation Division (OCD) hereby accepts the name change to “HollyFrontier Navajo Refining LLC”.

Please continue to reference “HollyFrontier Navajo Refining LLC” in your non-legal and especially any legal documents from now on.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Chavez, Carl J, EMNRD
Sent: Tuesday, March 28, 2017 11:17 AM
To: Gallegos, Denise, EMNRD <Denise.Gallegos@state.nm.us>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>
Subject: RE: Navajo Refining Company (GW-28)

Denise:

The name change would be just that, as the WQCC DP provision for transfer of ownership requires additional requirements. In this case, the operator’s or Permittee’s name changed from Navajo Refining Company to HollyFrontier Navajo Refining LLC.

Since you state below that SOS does have the highlighted company name listed, then they satisfied SOS requirements. Also, you received new replacement bonds on corrected forms with HollyFrontier (HF) Navajo Refining LLC.

Therefore, OCD is good to go. HF has satisfied SOS and OCD requirements with the name change.

Please contact me if you have questions. Thank you.

From: Gallegos, Denise, EMNRD
Sent: Tuesday, March 28, 2017 9:02 AM
To: Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Subject: RE: Navajo Refining Company (GW-28)

Hi Allison,

I checked on the SOS and there were 2 companies registered by the name of Navajo Refining Company. One was merged into Navajo Refining Company (DE) in 1993. The other company was converted to Navajo Refining Company, LP in 2002. I do not see anything changing the name from Navajo Refining Company to Holly Frontier Navajo Refining LLC. However, there is a company registered as Hollyfrontier Navajo Refining LLC with SOS. The 3 bonds currently on file with OCD have Navajo Refining Company as the entity name. I recently received new replacement bonds on the corrected forms but the entity on the bonds has Hollyfrontier Navajo Refining LLC listed. Since there was no name change on SOS should I reject them? I'm not sure what the name change process is for WQCC permits.

Thank you,

Denise A. Gallegos

Bond Administrator

Oil Conservation Division

Energy, Minerals & Natural Resources Department

1220 South Saint Francis Drive

Santa Fe, NM 87505

Office: 505.476.3453

Fax: 505.476.3462

From: Marks, Allison, EMNRD
Sent: Tuesday, March 28, 2017 8:43 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Gallegos, Denise, EMNRD <Denise.Gallegos@state.nm.us>
Subject: Re: Navajo Refining Company (GW-28)

Hi Carl.

The documentation looks fine for a simple name change. However, their bonds all must have that name change as well and they must have that name registered with the secretary of state. I've cc'd Denise on this, as she can check all of that for you or work with you to make sure all bonds are correctly titled. If not, Navajo will need to submit riders and get their binding correct (assuming the name is correct with SOS).

Sent from my iPhone

On Mar 28, 2017, at 4:25 PM, Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us> wrote:

Allison:

Please find attached HollyFrontier's document indicating that its acquisition of the Navajo Refining Company is a name change only, and that a transfer of ownership would not be required.

Do you concur?

Thank you.

From: Gallegos, Denise, EMNRD
Sent: Monday, March 27, 2017 2:04 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Subject: Navajo Refining Company

Hi Carl,

We currently have WQCC bonds for Navajo Refining Company, have they submitting anything to change their name to Holly Frontier Navajo Refining Company with you?

Thank you for your help!

Denise A. Gallegos

Bond Administrator

Oil Conservation Division

Energy, Minerals & Natural Resources Department

1220 South Saint Francis Drive

Santa Fe, NM 87505

Office: 505.476.3453

Fax: 505.476.3462

<HF New Name Only.pdf>



December 30, 2015

2015 DEC 30 000

2015 DEC -4 P 2:12

Via Certified U.S. Mail. No. 70151520000258081520

Carl J. Chavez, CHMM
Environmental Engineer
Oil Conservation Division- Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
CarlJ.Chavez@state.nm.us

RE: Artesia, NM Refinery - Discharge Permit No. GW-028

Dear Mr. Chavez:

This is to notify the New Mexico Oil Conservation Division that, effective January 1, 2016, the new name of Navajo Refining Company, L.L.C. is HollyFrontier Navajo Refining LLC. This is a change in corporate name, and there will be no associated transfer of ownership or change in operational responsibilities. Also, this name change does not result from any changes in corporate structure of the parent company.

We hereby request the name on the subject permit be changed to "HollyFrontier Navajo Refining LLC." If this request requires any further information or if you have any questions, please contact me at (575) 746-5487.

Sincerely,

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



RECEIVED

2015 JAN 30 A 10:38

Mr. Dave Cobrain
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

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

January 30, 2015

**RE: Status of the Groundwater Recovery System
Navajo Refining Company, Artesia Refinery
RCRA Permit No. NMD048918817
Discharge Permit GW-028**

Dear Mr. Cobrain and Mr. Chavez:

The Navajo Refining Company, LLC (NRC) has been operating a groundwater recovery system to capture phase separated hydrocarbons (PSH) present within the shallow water bearing zone beneath the Artesia Refinery (Refinery) and the field east of the Refinery owned by NRC. The operation of the system is conducted in accordance with the Post Closure Care Permit (PCC Permit) administered by the New Mexico Environment Department (NMED) and the Discharge Permit administered by the Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department.

The recovery system consists of a series of trenches and recovery wells located throughout the Refinery and the field east of the Refinery owned by NRC. The typical recovery well contains two pumps: a groundwater pump typically placed near the bottom of the recovery well and a PSH-only "skimming" pump placed near the interface between the groundwater and PSH. The groundwater pumps are operated on an as-needed basis to depress the groundwater beneath the PSH, drawing additional PSH into each recovery well. The groundwater pumps are typically cycled in order to minimize the volume of groundwater produced. Recovered groundwater is piped to the process wastewater system for treatment and ultimate discharge to either the City of Artesia wastewater treatment system or a deep well injection site(s) located approximately 12 miles east of the Refinery. Recovered PSH is placed into the crude stream for processing. The volume of PSH and groundwater recovered is reported to both NMED and OCD annually in the required annual monitoring report.

In November 2014, NRC submitted a well abandonment plan (plugging plan) to the New Mexico Office of the State Engineer (OSE) requesting approval to abandon three recovery wells located adjacent to Bolton Road that are no longer used as collection points within the recovery system. The OSE approved the plugging plan but raised questions on the diversion of groundwater as part of the recovery system. OSE verbally requested that NRC cease pumping of groundwater from the recovery system until a review of the operation and potential water rights issues could be completed. As a result, the groundwater pumps associated with the recovery system were turned off on November 17, 2014, with the exception of the total fluids pump located in the french drain immediately east of Bolton Road. The PSH skimming pumps continue to be operated; thus, the recovery system is still operating but at slightly reduced efficiency. The change in operational mode (i.e. not operating the groundwater pumps) will be documented in the 2014 Groundwater Report and the 2014 Annual Report.

A meeting was conducted on December 29, 2014 to describe the recovery system to OSE personnel and to discuss any potential water rights requirements. The volume of groundwater "diverted" from the shallow water bearing zone by the recovery system (since 1995) was provided to OSE and compared to the volume of water discharged to the reverse osmosis (RO) reject discharge fields for the same period. Although not permitted by OSE for the purpose, the discharge to the RO reject fields provides return flow to the shallow water bearing zone, as demonstrated by the investigation of the RO reject fields conducted in 2013 at the request of OCD. Accordingly, any water diverted in connection with the recovery system from the shallow water bearing zone is "offset" by water returned to the same aquifer. NRC presented the volume information to OSE and requested whether the return flow through the RO reject fields could be considered as an offset to the volume of groundwater diverted for remediation purposes. As an initial matter, the OSE personnel with whom the meeting was held stated that this would likely not be allowable since the RO was currently associated with NRC's artesian groundwater rights and, as currently permitted, NRC may not apply any excess artesian water rights to the shallow water bearing zone diversion. OSE personnel stated that NRC would likely need to obtain shallow water rights through either a leasing agreement or purchase of existing water rights to continue operation of the system. Another alternative suggested by OSE was to inject the recovered/diverted groundwater phase into the shallow water bearing zone.

NRC is currently reviewing various options for addressing the OSE concerns for water rights for the shallow groundwater, including:

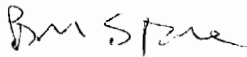
- Modifying the existing water rights permit for the artesian aquifer to apply the return flow credit from discharge to the RO reject fields allowed under this permit to the diversion of the shallow groundwater from the recovery system. This modification would be submitted along with a request for emergency approval under Section 72-5-25 New Mexico Statutes Amended 1978 (NMSA 1978).
- Identifying shallow groundwater rights nearby that may be obtainable under either a lease or purchase agreement. This approach may require a significant amount of time, resulting in a longer period in which the groundwater pumps are not operating.

- Evaluating the potential for re-injection of the groundwater into the shallow groundwater. This approach will require approval of both NMED and OCD and is expected to require a modification of the Discharge Permit. As part of this evaluation, the possibility of using the re-injection of groundwater for either gradient control (i.e., a hydraulic barrier) or for flushing of groundwater contaminants to the recovery system is being considered. This approach will require a significant amount of time for design and construction of treatment (if required) and injection infrastructure.

The groundwater pumps, as described above, will remain inactive until an agreement can be reached with the various agencies to allow the diversion of groundwater from the shallow water bearing zone for the remediation system. The PSH-only pumps will remain active; however, NRC believes that operation of the remediation system in this fashion is not the most efficient or effective method to control potential migration of the PSH plume. As we proceed with evaluation of the various options we will keep you informed and may request your assistance with regard to ensuring an effective resolution of this matter with the OSE.

NRC will continue to update both NMED and OCD regarding the status of the remediation system periodically. If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5294 or Robert Combs at 575-746-5382.

Sincerely,



Brian Stone
Environmental Specialist
Navajo Refining Company, LLC

c: Robert Combs, NRC
Pamela R. Krueger, ARCADIS

Chavez, Carl J, EMNRD

From: Tsinnajinnie, Leona, NMENV
Sent: Monday, May 05, 2014 1:17 PM
To: Krueger, Pamela; Chavez, Carl J, EMNRD
Cc: Robert Combs; dan.crawford@hollyfrontier.com; Turner, Maisha; Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV
Subject: RE: Navajo - Groundwater monitoring and PSH

Pam-

It appears there is an increasing trend of product in KWB-8 during the spring sampling events. Navajo will continue to monitor KWB-7 and KW-11A as scheduled and we will have to wait until next spring to see if product continues to be present in these two wells. In the meantime, NMED would like Navajo to explore options to monitor this area and make a concerted effort to find KWB-P2.

Thanks,
Leona

From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]
Sent: Friday, May 02, 2014 8:15 AM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Robert Combs; dan.crawford@hollyfrontier.com; Turner, Maisha; Sanchez, Daniel J., EMNRD; Griswold, Jim, EMNRD; Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV
Subject: RE: Navajo - Groundwater monitoring and PSH

Carl –

Thank you for the response to our email dated April 21, 2014 notifying you of the presence of phase separated hydrocarbons (PSH) in two wells associated with the Navajo Refinery that have not previously contained PSH. This email provides clarifications in response to your comments sent on April 24, 2014.

1. The proposed MWs do not appear to be in line with contaminant migration (PSH & possibly dissolved phase hydrocarbons).

The selection of the proposed well locations was based on the results of a geophysical survey (Contaminant Migration Evaluation Work Plan), historic PSH and dissolved phase impacts in the existing wells in the area (RW-14/RW-14R, RW-22, KWB-7, KWB-8, KWB-11A/KWB-11B, and KWB-P2), and accessibility for a drill rig within the pecan orchard (subsurface irrigation piping). The figure was developed to reflect these objectives and was included in the April 21, 2014 notification email for reference only.

The two temporary wells shown in that figure were installed in February 2014 and were plugged and abandoned in March 2014. While the wells were in place, groundwater samples were obtained for analysis of dissolved phase constituents and the wells were gauged weekly to monitor the potential presence of PSH. During this period, no PSH was observed. The wells were plugged and abandoned prior to the start of flood irrigation of the orchard.

2. *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.*

Although it would be desirable to have monitoring points closer to the locations of KWB-7 and KWB-11A, the landowner has previously stated that no additional permanent monitoring wells may be installed within the orchard. The orchard operations include routine flood irrigation and operation of heavy machinery (tree shakers, tree pruners, vacuum trucks) in the rows between the trees. Therefore, the landowner believes the placement of wells within the orchard is detrimental to their operations. And the orchard farming operations are detrimental to the condition of the wells.

MW-135 was installed in February 2014 at the eastern boundary of the pecan orchard to provide downgradient delineation of the dissolved phase plume. The groundwater sample collected in February 2014 from MW-135 did not contain detectable concentrations of total petroleum hydrocarbons (TPH) or volatile organic compounds (VOCs). This well has been added to the semiannual groundwater monitoring program and another sample was recently collected (April 10, 2014) as part of the first semiannual monitoring event. Analytical data for the April sample has not been reported by the laboratory as of this date.

3. *Perhaps there is an explanation why the MWs are located north of the trend of ground water contamination?*

At the time the well locations were proposed, there was no indication that there were groundwater impacts in KWB-7 and KWB-11A. Please see response to comment 1 above.

As a clarification, we would like to point out that the initial gauging of the wells in and around the pecan orchard occurred on March 26, 2014, shortly after flood irrigation of the orchard began. Flood irrigation continued during the three weeks between the initial gauging and the day that PSH was observed, April 17, 2014. As shown by the groundwater measurements provided in the April 21, 2014 email, the flood irrigation caused the groundwater to rise between 0.7 and 0.8 feet. Radial groundwater mounding may have caused the PSH present west of KWB-7 and KWB-11A to be pushed slightly to the east. The groundwater and PSH elevations will continue to be monitored in the pecan orchard, and Navajo continues to operate the LNAPL recovery system including wells located upgradient of and within the western portion of the pecan orchard.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

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Please consider the environment before printing this email.

From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Thursday, April 24, 2014 5:30 PM
To: 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: CarlJ.Chavez@State.NM.US

Web: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>



From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]

Sent: Monday, April 21, 2014 2:04 PM

To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV

Cc: Robert Combs; dan.crawford@hollyfrontier.com; 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

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State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division



APRIL 9, 2014

Mr. Mike Holder
Environmental Manager
Navajo Refining Company, L.L.C.
501 E. Main Street
Artesia, NM 88210

**Re: Artesia Refinery (GW-028) "Reverse Osmosis Reject Water Discharge Fields Investigation Final Report"
February 2014, Eddy County, New Mexico**

Dear Mr. Holder:

The New Mexico Oil Conservation Division (OCD) is in receipt of the above subject report (report). The report is required to satisfy Section 6.D.3 (Final Site Investigation Report) of the permit (GW-028).

Based on the report, and lack of ground water "background" determinations for the RO North and South Reject Fields (fields), the potential for assessment and determination of impacts from historical RO effluent discharges into the fields remains unknown.

Please resubmit the report with "background" water quality sections related to the North and South Reject Fields in comparison to associated monitor well water quality monitoring conducted under Section 6.D of the permit with conclusions derived thereof.

The OCD requests a resubmittal of the report addressing the items of the report within 90 days of the date of this letter. Please contact Carl Chávez of my staff if you have any questions at (505) 476-3490, U.S. Mail at the address below, or email at CarlJ.Chavez@state.nm.us.

Sincerely,

Scott Dawson
Deputy Director

DS/cjc

cc: Mr. Daniel Sanchez, OCD Santa Fe
Mr. Glenn von Gonten, OCD Santa Fe
OCD Artesia Office

Chavez, Carl J, EMNRD

Subject: Groundwater monitoring - Navajo Refinery
Location: Teleconference Call- Arcadis will provide teleconference phone in number

Start: Fri 3/7/2014 10:30 AM
End: Fri 3/7/2014 11:30 AM

Recurrence: (none)

Meeting Status: Meeting organizer

Organizer: Chavez, Carl J, EMNRD
Required Attendees: 'Krueger, Pamela'; Cobrain, Dave, NMENV
Optional Attendees: Robert Combs; Holder, Mike (Michael.Holder@hollyfrontier.com); Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV

The New Mexico Oil Conservation Division (OCD) requests the following from the operator subsequent to this morning's meeting:

- 1) Provide OCD and NMED (state agencies) with the status on ground water "Background" determination within 14 days of receipt of this message.
- 2) Within 60-days (or by COB May 7, 2014) of this message, provide an analysis of the ground water in comparison with WQCC water quality standards and background as determined by the operator from MWs within the vicinity of the surface impoundments and Pecos River. If the greater of the WQCC water quality standards and/or "Background" is exceeded, the operator shall propose a remedy (ies) based on the analysis to the state agencies.
- 3) The above could be completed with the submittal of the Surface Impoundments Closure Report submitted to the NMED with copy to the OCD.

Please contact Carl Chavez at (505) 476-3490 if you have questions. Thank you.

Thanks Carl. We can use the following for the call:

Phone: 855-201-9213
Code: 785-794-7754

From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]
Sent: Wednesday, March 05, 2014 2:35 PM
To: Chavez, Carl J, EMNRD
Cc: Robert Combs; Holder, Mike (Michael.Holder@hollyfrontier.com); Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: RE: Groundwater monitoring - Navajo Refinery

Carl – Would it be possible to schedule a brief conference call to clarify your response, preferably on Friday 3/7/14?

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

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Please consider the environment before printing this email.

From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Wednesday, March 05, 2014 11:01 AM
To: Krueger, Pamela
Cc: Robert Combs; Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: RE: Groundwater monitoring - Navajo Refinery

Pam:

Good morning. The New Mexico Oil Conservation Division (OCD) has determined that it will not approve the monitoring change requested below.

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: CarlJ.Chavez@State.NM.US

Web: <http://www.emnrd.state.nm.us/ocd/>

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From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]
Sent: Friday, February 21, 2014 4:09 PM
To: Chavez, Carl J, EMNRD
Cc: Robert Combs; Turner, Maisha
Subject: Groundwater monitoring - Navajo Refinery

Carl – On January 29, 2014, the NMED HWB approved Navajo’s 2013 Facility-Wide Groundwater Monitoring Program (2013 FWGMWP), with modifications (see attached). In Section 5.3.2 of the 2013 FWGMWP, Navajo proposed to reduce the sampling frequency from semiannually to annually for 35 monitoring wells and from annually to biennially on 2 monitoring wells. Navajo also proposed to drop one irrigation well from the monitoring program, since the well is out of service and is not owned by Navajo.

NMED HWB approved the request for some of the monitoring wells, denied the request for other monitoring wells, and deferred to OCD on 3 of the monitoring wells. The requested changes and NMED HWB’s responses are summarized below. Navajo respectfully requests that OCD provide concurrence or comment on the requested changes no later than March 7, 2014 so that these changes may be incorporated into the spring 2014 monitoring event.

Navajo proposes to reduce the frequency of sample collection from semiannually to annually for the following wells for the reasons given in parentheses:

- KWB-9 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

- MW-8 (no hydrocarbon impacts, declining arsenic concentrations, in cluster of wells on semiannual monitoring list)
NMED concurred
- MW-18 (stable to declining COC trends, not in sentinel location)
NMED concurred
- MW-22A (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-23 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-28 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-41 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-42 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-43 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-49 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-61 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-62 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-66 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-71 (in cluster of wells and beyond dissolved phase plume)
NMED concurred
- MW-72 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-73 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-74 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-75 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-76 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-77 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-79 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-83 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-84 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-93 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-98 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-101 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-104 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-106 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- NP-1 (stable to declining COC concentrations, downgradient of sentinel well)

NMED denied – must remain at semiannual frequency

- OCD-1R (stable COC concentrations outside and up- to cross-gradient of plume)

NMED denied – must remain at semiannual frequency

- OCD-2A (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- OCD-3 (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- OCD-4 (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- RA-1227 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

- RA-3156 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

Navajo proposes to reduce the frequency of sample collection from annually to biennially for the following wells:

- NP-5 (no COC impacts, cross-gradient outside of plume, not in sentinel location)

NMED concurred

- NP-6 (in cluster of wells and beyond dissolved phase plume)

NMED concurred

Navajo does not own irrigation well RA-314 and the well owner has removed the pump and electrical service to this well. As a result, Navajo does not have access to the well to collect a sample and the well is being dropped from the monitoring program.

NMED concurred

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

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Chavez, Carl J, EMNRD

Subject: Groundwater monitoring - Navajo Refinery
Location: Teleconference Call- Arcadis will provide teleconference phone in number

Start: Fri 3/7/2014 10:30 AM
End: Fri 3/7/2014 11:30 AM

Recurrence: (none)

Meeting Status: Meeting organizer

Organizer: Chavez, Carl J, EMNRD
Required Attendees: 'Krueger, Pamela'; Cobrain, Dave, NMENV
Optional Attendees: Robert Combs; Holder, Mike (Michael.Holder@hollyfrontier.com); Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV

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Thanks Carl. We can use the following for the call:

Phone: 855-201-9213
Code: 785-794-7754

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Sent: Wednesday, March 05, 2014 2:35 PM
To: Chavez, Carl J, EMNRD
Cc: Robert Combs; Holder, Mike (Michael.Holder@hollyfrontier.com); Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: RE: Groundwater monitoring - Navajo Refinery

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Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

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From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Wednesday, March 05, 2014 11:01 AM
To: Krueger, Pamela
Cc: Robert Combs; Turner, Maisha; VonGonten, Glenn, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: RE: Groundwater monitoring - Navajo Refinery

Pam:

Good morning. The New Mexico Oil Conservation Division (OCD) has determined that it will not approve the monitoring change requested below.

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: CarlJ.Chavez@State.NM.US

Web: <http://www.emnrd.state.nm.us/ocd/>

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From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]
Sent: Friday, February 21, 2014 4:09 PM
To: Chavez, Carl J, EMNRD
Cc: Robert Combs; Turner, Maisha
Subject: Groundwater monitoring - Navajo Refinery

Carl – On January 29, 2014, the NMED HWB approved Navajo’s 2013 Facility-Wide Groundwater Monitoring Program (2013 FWGMWP), with modifications (see attached). In Section 5.3.2 of the 2013 FWGMWP, Navajo proposed to reduce the sampling frequency from semiannually to annually for 35 monitoring wells and from annually to biennially on 2 monitoring wells. Navajo also proposed to drop one irrigation well from the monitoring program, since the well is out of service and is not owned by Navajo.

NMED HWB approved the request for some of the monitoring wells, denied the request for other monitoring wells, and deferred to OCD on 3 of the monitoring wells. The requested changes and NMED HWB’s responses are summarized below. Navajo respectfully requests that OCD provide concurrence or comment on the requested changes no later than March 7, 2014 so that these changes may be incorporated into the spring 2014 monitoring event.

Navajo proposes to reduce the frequency of sample collection from semiannually to annually for the following wells for the reasons given in parentheses:

- KWB-9 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

- MW-8 (no hydrocarbon impacts, declining arsenic concentrations, in cluster of wells on semiannual monitoring list)
NMED concurred
- MW-18 (stable to declining COC trends, not in sentinel location)
NMED concurred
- MW-22A (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-23 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-28 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-41 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-42 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-43 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-49 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-61 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-62 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-66 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-71 (in cluster of wells and beyond dissolved phase plume)
NMED concurred
- MW-72 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-73 (stable COC concentrations interior to plume, not in sentinel location)
NMED concurred
- MW-74 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-75 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-76 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-77 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-79 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-83 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-84 (stable COC concentrations interior to plume, not in sentinel location)
NMED denied – must remain at semiannual frequency
- MW-93 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-98 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-101 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-104 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- MW-106 (stable COC concentrations interior to plume, not in sentinel location)

NMED denied – must remain at semiannual frequency

- NP-1 (stable to declining COC concentrations, downgradient of sentinel well)

NMED denied – must remain at semiannual frequency

- OCD-1R (stable COC concentrations outside and up- to cross-gradient of plume)

NMED denied – must remain at semiannual frequency

- OCD-2A (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- OCD-3 (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- OCD-4 (stable COC concentrations outside and up- to cross-gradient of plume)

NMED concurred, but deferred to OCD approval of same

- RA-1227 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

- RA-3156 (no COC impacts, beyond sentinel wells, landowner currently denying access)

NMED concurred

Navajo proposes to reduce the frequency of sample collection from annually to biennially for the following wells:

- NP-5 (no COC impacts, cross-gradient outside of plume, not in sentinel location)

NMED concurred

- NP-6 (in cluster of wells and beyond dissolved phase plume)

NMED concurred

Navajo does not own irrigation well RA-314 and the well owner has removed the pump and electrical service to this well. As a result, Navajo does not have access to the well to collect a sample and the well is being dropped from the monitoring program.

NMED concurred

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

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Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Monday, May 07, 2012 9:59 AM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Holder, Mike; Lackey, Johnny; Schultz, Michele
Subject: Artesia Discharge Permit--Notification of new groundwater contamination

Carl,

We were notified on Friday (May 4, 2012) by Arcadis that PSH has been found in three new locations (existing wells) that have previously not had PSH present. According to our permit, Condition 20.C.ii, requires Navajo to report this to OCD within 15 days of discovery. We are working with Arcadis to determine the source of the PSH. The information provided by Arcadis in their notification is provided below:

Based on the spring event gauging, there are three wells that now have PSH present that did not contain PSH during 2009-2011, as follows:

- MW-58 has 0.9 ft of PSH – located south of US-82, east of KWB-2R which has contained PSH intermittently and currently has 1.25 ft
- MW-91 has 0.24 ft of PSH – located on north bank of Eagle Draw on western side of Refinery, south side of clarified slurry oil tank farm, across from RW-1
- MW-99 has 0.16 ft of PSH – located near northeast corner of the southeast tank farm, between MW-28 and MW-107 and neither of those have PSH

Please let me know if you have any questions or comments.

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: Chavez, Carl J, EMNRD
Sent: Wednesday, October 26, 2011 1:36 PM
To: 'Lackey, Johnny'
Cc: 'Moore, Darrell'; VonGonten, Glenn, EMNRD
Subject: FW: Affidavit Proof of Public Notice for Artesia and Lovington (Lea) Refinery Discharge Permit Renewals

Johnny:

It appears that Darrell is out of the office and would not have received the recently sent message below. Consequently, I'm sending it to you.

The OCD needs your public comment on the draft discharge permits (where applicable) in a letter with justification for recommended changes by COB on November 4, 2011.

Also, the OCD needs to know if the refinery has satisfied its public notice requirements under 20.6.2.3108 NMAC. The OCD has not received an affidavit of proof for publication in a newspaper yet. Please provide the anticipated date of receipt. If the refinery has received any public comments on its public notices, the OCD needs to receive this information as well and it can also be included with your November 4, 2011 submittal. This applies to both the Artesia and Lea Refineries.

Please contact me if you have questions. 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
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From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 25, 2011 10:40 AM
To: 'Moore, Darrell'
Cc: VonGonten, Glenn, EMNRD
Subject: Affidavit Proof of Public Notice for Artesia and Lovington (Lea) Refinery Discharge Permit Renewals

Darrell:

Good morning. Has the Navajo Refinery public noticed the refinery discharge permit renewals in the newspaper? If so, could you please send me the above subject items for your refineries soon. 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
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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, September 09, 2011 11:51 AM
To: Moore, Darrell
Cc: Lackey, Johnny; Brooks, David K., EMNRD
Subject: Artesia (GW-028) and Lovington (GW-014) Refineries and Ownership Inquiry

Darrell

Good morning. I've notice the change to your e-mail address from "hollycorp" to "hollyfrontier" based on a recent corporate merger I believe?

Has there been a transfer of ownership? Please provide documentation of merger to the OCD for a determination of whether a transfer of ownership has occurred under the discharge permit by COB Friday, September 16, 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: <http://www.emnrd.state.nm.us/oed/>

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<http://www.emnrd.state.nm.us/oed/environmental.htm#environmental>)

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Friday, May 13, 2011 9:56 AM
To: Monzeglio, Hope, NMENV; Chavez, Carl J, EMNRD
Cc: Strange, Aaron
Subject: Product in MW-34

Hope and Carl

During recent routine gauging of our monitor wells, product was discovered in MW-34 which is due east of Tk 815. We are investigating. We have found no new leaks in the area and this may be associated with the leak of Jet Fuel we discovered last year in MW-94 which is in the same area. We have hired a drilling rig to start delineating in the area next Wednesday to see if we can pinpoint the release. I will keep you apprised of our progress.

We are not planning on sending in a C-141 on this event unless we determine it is a new release.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, LLC
Phone Number 575-746-5281
Cell Number 575-703-5058
Fax Number 575-746-5451

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Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Thursday, December 02, 2010 9:54 AM
To: Chavez, Carl J, EMNRD; Lackey, Johnny
Cc: VonGonten, Glenn, EMNRD
Subject: RE: Status of Artesia Refinery (GW-028) Arcadis Free-Product Recovery System Work Plan

Carl

Arcadis visited the refinery the second week of November to get refinery requirements (piping specs, electricity availability, head pressures, etc) and are in the process of coming up with drawings. Those drawings will be given to Navajo the week of December 20 for our review. Once our engineers have approved the drawings and specs we will get those to OCD. It may be around the first of the year before we can get those to you.

From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Thursday, December 02, 2010 9:24 AM
To: Moore, Darrell; Lackey, Johnny
Cc: VonGonten, Glenn, EMNRD
Subject: FW: Status of Artesia Refinery (GW-028) Arcadis Free-Product Recovery System Work Plan

Darrell and Johnny:

Good morning. Can you give us the status of the Arcadis Free-Product Recovery Design Work Plan and when NMED and OCD can expect to receive it?

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/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Thursday, December 02, 2010 9:21 AM
To: Chavez, Carl J, EMNRD
Subject: RE: Status of Artesia Refinery (GW-028) Arcadis Free-Product Recovery System Work Plan

Carl

We have not received anything yet.

Thanks
Hope

From: Chavez, Carl J, EMNRD
Sent: Thursday, December 02, 2010 9:18 AM
To: Monzeglio, Hope, NMENV

Cc: Moore, Darrell

Subject: Status of Artesia Refinery (GW-028) Arcadis Free-Product Recovery System Work Plan

Hope:

Good morning. Before I forget, did NMED receive the Arcadis Work Plan for the free-product recovery system design from Navajo Refining Company? I think we were supposed to receive it in mid-November of 2010. 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
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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, September 24, 2010 9:54 AM
To: Hill, Larry, EMNRD; Dade, Randy, EMNRD; Perrin, Charlie, EMNRD
Cc: VonGonten, Glenn, EMNRD
Subject: Refinery Meetings in Santa Fe October 6, 2010

Hey guys.

Just wanted to let you know OCD- SF is meeting with Navajo Refining Company (NRC) and Western Refining SW, Inc. (Western) on the above subject date in case you would like to participate by telephone conference. OCD- SF will go over the discharge permit with operators to make sure we are moving forward to address the permit. OCD- SF is under travel restriction; thus, meetings to discuss facility issues makes sense at this time.

The meetings are as follows:

- 1) NRC from 10 to Noon: Lovington or Lea Refinery- GW-014 (particularly interested in the environmental site investigation and GW quality information from the recently installed series of MWs) at the facility within Lovington's Well Head Protection Area.

An agenda item for the NRC- Artesia Refinery (GW-028) is included in this meeting, but another meeting to discuss the permit in more detail will likely be scheduled at a later date. Some current issues are: free-product recovery system is down and a work plan will be submitted by 11/2010 to construct a functional system for product recovery. Issues with the effluent line east of the facility, across Pecos River and to their 3 UIC Class I (NH) disposal wells. Randy Dade will be inspecting the line, recent releases with repair, hydrostatic testing requirements, and requesting a work plan for complete replacement of the effluent line by March of 2011. The Artesia refinery was assessed a fine by NM OSHA for over \$700K for the March 2010 tank explosion that resulted in loss of life of 2 workers from TX.

- 2) Western from 1 to 3 p.m.: Gallup Refinery- GW-028 (particularly interested in the tank construction, waste water pond construction and any permit deadlines). Facility-Wide GW Monitoring Plan will replace the GW sampling portion of the permit in the upcoming renewal of the discharge permit. The refinery is installing a new waste water treatment system for the refinery under an EPA CAFO.

A request for a meeting on Western's Bloomfield Refinery- GW-001 was made today. There is a UIC Class I (NH) Well within the facility (UICI-009) where a hearing request was received on the discharge permit renewal and the Director is currently assessing the hearing request. Bloomfield was allowed to idle or shut-in operations under a recently issued discharge permit renewal. The bulk storage and transportation units are in operation and the UIC Class I well is used for disposal of recovered product behind the remediation barrier wall and the river. The voluntary biovent remediation project at the river terrace is still in progress with ground water and surface quality monitoring.

Let me know if you want to listen in and participate or if you have any issues that OCD-SF needs to discuss during the meetings that would work too. Please contact me if you have questions or wish to discuss any issues you may have before the meeting.

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
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E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, May 21, 2010 4:56 PM
To: 'Moore, Darrell'
Subject: Artesia Refinery (GW-028) Roll Off Pad NE Corner of Facility

Approved, with the condition for fluids removal from sump be in accordance with the discharge permit and OCD be notified if construction is over an old structures, tank locations, etc. that would inhibit remedial work under RCRA, OCD, etc.

Please be advised that OCD approval of this plan does not relieve Navajo Refining Company of responsibility should their operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve Navajo Refining Company of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Please contact me if you have questions. 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/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Tuesday, May 18, 2010 8:15 AM
To: Chavez, Carl J, EMNRD
Subject: FW:

Carl

Here are drawings of a Roll Off Pad we are going to build in Artesia. This pad will be built on the northeast corner of the facility.

Your attention is appreciated.

From: Hernandez, Carrie
Sent: Tuesday, May 18, 2010 8:12 AM
To: Moore, Darrell
Subject:

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Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Tuesday, May 18, 2010 8:15 AM
To: Chavez, Carl J, EMNRD
Subject: FW:
Attachments: Artesia Roll Off Pad.pdf

Carl

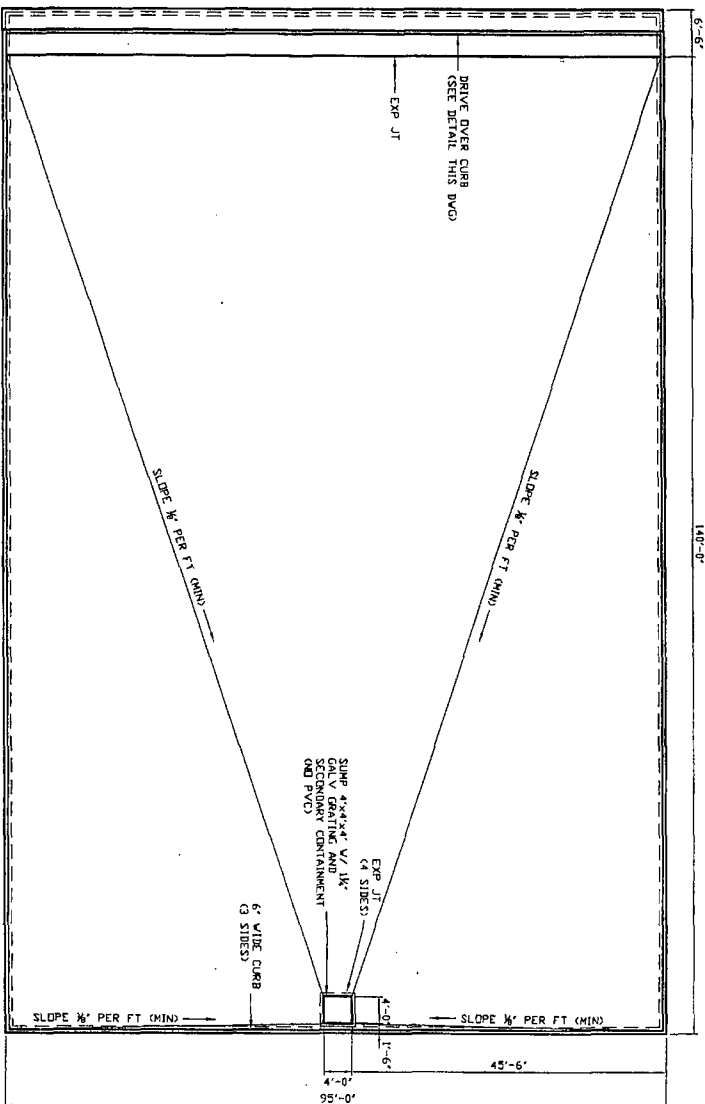
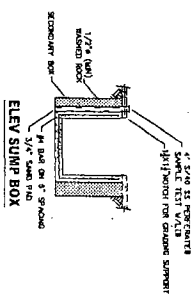
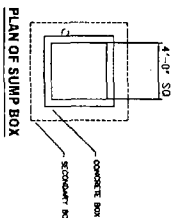
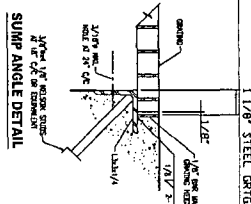
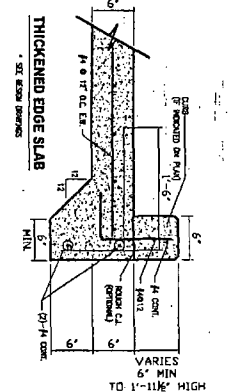
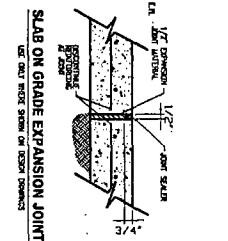
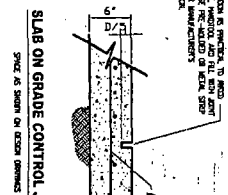
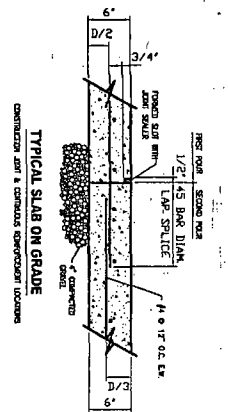
Here are drawings of a Roll Off Pad we are going to build in Artesia. This pad will be built on the northeast corner of the facility.

Your attention is appreciated.

From: Hernandez, Carrie
Sent: Tuesday, May 18, 2010 8:12 AM
To: Moore, Darrell
Subject:

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[illegible]

- [illegible]

ISSUED FOR
MAR 19 2010
REVIEW & COMMENTS

UNIT 55
ROLL OFF BINS
CONCRETE

		NAVJO REPINING CO. ENGINEERING DEPARTMENT P.O. DRAWER 158 ANTONIA, NEW MEXICO	
ORDER NO.	DATE	QUANTITY	SCALE
3/17/70	3/1	2	SCALE = NONE
DRAWING NUMBER 55-484-D-01		SHEET NO. 1	

Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Monday, November 30, 2009 8:31 AM
To: Moore, Darrell
Cc: Kieling, John, NMENV; Cobrain, Dave, NMENV; Lackey, Johnny; Chavez, Carl J, EMNRD
Subject: PG Loading Rack
Attachments: NRC 09-005 PG Loading Rack 11-30-09.pdf

This will go out in the mail today.

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 476-6045; Main No.: (505)-476-6000
Fax: (505)-476-6060
hope.monzeglio@state.nm.us

Websites:

New Mexico Environment Department
Hazardous Waste Bureau



BILL RICHARDSON
Governor

DIANE DENISH
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



RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 30, 2009

Darrell Moore
Navajo Refining Company
501 East Main Street, P. O. Drawer 159
Artesia, New Mexico 88210

**RE: APPROVAL OF PARTIAL RESPONSE ACTION
SPILL AT THE PG LOADING RACK
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID # NMD048918817
HWB-NRC-09-005**

Dear Mr. Moore:

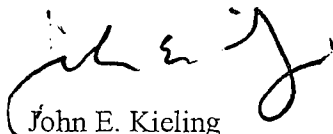
The New Mexico Environment Department (NMED) has reviewed Navajo Refining Company, Artesia Refinery's (the Permittee) *Delineation Report/Work Plan* (Report) *Navajo Refining Company PG loading Rack at the Artesia Refinery Section 8, Township 17S, Range 26E Eddy County, New Mexico*, dated June 24, 2009 and received August 21, 2009. This Report discusses the release of approximately 300 to 434 barrels of fuel oil that spilled onto the PG loading racks resulting from valve failure on a rail tanker car. Fuel oil was released onto the ground, to an area just outside of Navajo Refinery fence line adjacent to and within the railroad tracks. The contamination within the railroad tracks was left in place to maintain integrity of the railroad tracks. As a result of waste being left in place, the PG Loading Racks are now a solid waste management unit (SWMU) and will be added to the SWMU list included in Appendix A of the Post Closure Care Permit (Permit). Corrective action requirements for this SWMU will be addressed under 40 CFR 264.101 in accordance with the Permit.

The following information must be provided in future reports of this nature:

- a. The Report did not clearly describe the area in which the spill occurred (e.g., no dimensions were listed).
- b. The figures illustrating the auger hole sampling locations are unclear. The sample locations identified in the laboratory reports cannot be located on the figures. The figures do not show a scale or identify true North.
- c. The black and white photographs do not demonstrate the absence of petroleum-related staining.
- d. The analytical data for diesel range organics and motor oil range organics were not compared to the NMED's TPH Soil Screening Guidelines.

Please contact Hope Monzeglio of my staff at 505-476-6045 if you have questions regarding this letter.

Sincerely,



John E. Kielling
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio NMED HWB
J. Lackey, Navajo
C. Chavez, OCD
Reading and NRC 2009 file
HWB-NRC-09-005

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Wednesday, July 15, 2009 11:03 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Subject: Praxair Leak Detection System

Carl and Hope,

We have started installation of the Praxair Leak Detection System at the refinery here in Artesia. On this pass, we will install the system on five (5) tanks with a total of fifteen (15) being finished by year end. I just wanted to give you a heads up that we have started.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, LLC
Phone Number 575-746-5281
Cell Number 575-703-5058
Fax Number 575-746-5451

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This inbound email has been scanned by the MessageLabs Email Security System.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, May 04, 2009 8:54 AM
To: Jones, Brad A., EMNRD
Cc: 'Moore, Darrell'
Subject: RE: Fire Water Pond

The OCD had informed the refinery that it had better obtain filters to take out iron in the past and that discharging above WQCC regulations was not acceptable. It was my understanding that Darrell was going to purchase filters to comply with this. Wayne Price had been approving discharges from tanks, etc. where Iron was a problem on a case-by-case basis for several years before the OCD finally told Darrell that they need to pre-treat the water for iron or any other compounds/elements that exceeded WQCC Standards. Portable filters to run the water through to meet discharge requirements are available and the refinery has had ample time to address this issue so it would crop up again as an issue.

My recommendation is that the discharge cannot be approved without treatment and verification that the discharge meets WQCC standards. 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: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Jones, Brad A., EMNRD
Sent: Monday, May 04, 2009 7:43 AM
To: Chavez, Carl J, EMNRD
Subject: FW: Fire Water Pond

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Monday, April 27, 2009 10:20 AM
To: Jones, Brad A., EMNRD
Subject: Fire Water Pond

Brad,

We have a fire water pond that we need to do some work on. The pond contains fresh water pumped straight out of the ground and stored in an earthen diked area for emergency fire water. We need to do some work on the dike. We would like to drain the water to our farm. This will be the same farm that the RO reject is currently being drained to. I have attached the analysis from this water. Ive also attached an analysis we did on our water well itself to see what the iron content of the groundwater is. We have had issues with the amount of iron in some of our samples. As you will see, a certain amount of iron is already in the fresh ground water. As a matter of fact, it is above the WQCC standards straight out of the ground.

As I said, we would like to dump this water to our farm. We are requesting permission to do this.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, LLC
Phone Number 575-746-5281

Cell Number 575-703-5058
Fax Number 575-746-5451

This inbound email has been scanned by the MessageLabs Email Security System.

Chavez, Carl J, EMNRD

From: Jones, Brad A., EMNRD
Sent: Monday, May 04, 2009 7:43 AM
To: Chavez, Carl J, EMNRD
Subject: FW: Fire Water Pond
Attachments: West Fire Water Pond Final.pdf; Well Water Iron Final.pdf

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Monday, April 27, 2009 10:20 AM
To: Jones, Brad A., EMNRD
Subject: Fire Water Pond

Brad,

We have a fire water pond that we need to do some work on. The pond contains fresh water pumped straight out of the ground and stored in an earthen diked area for emergency fire water. We need to do some work on the dike. We would like to drain the water to our farm. This will be the same farm that the RO reject is currently being drained to. I have attached the analysis from this water. Ive also attached an analysis we did on our water well itself to see what the iron content of the groundwater is. We have had issues with the amount of iron in some of our samples. As you will see, a certain amount of iron is already in the fresh ground water. As a matter of fact, it is above the WQCC standards straight out of the ground.

As I said, we would like to dump this water to our farm. We are requesting permission to do this.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, LLC
Phone Number 575-746-5281
Cell Number 575-703-5058
Fax Number 575-746-5451

This inbound email has been scanned by the MessageLabs Email Security System.

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



Environmental Division

14-Apr-09

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 746-5468
Fax: (575) 746-5421

Re: West Fire Water Pond

Work Order : **0904139**

Dear Aaron,

ALS Laboratory Group received 2 samples on 4/7/2009 09:10 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Laboratory Group 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 Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 49.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

JayLynn F Thibault

Electronically approved by: Glenda H. Ramos

JayLynn F Thibault
Project Manager



Certificate No: T104704231-08-TX

ALS Group USA, Corp.

Part of the **ALS Laboratory Group**

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338

Phone: (281) 530-5656 Fax: (281) 530-5887

www.alsglobal.com www.elabi.com

A Campbell Brothers Limited Company

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company
Project: West Fire Water Pond
Work Order: 0904139

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
0904139-01	West Fire Water Pond	Water		4/6/2009 14:35	4/7/2009 09:10	<input type="checkbox"/>
0904139-02	Trip Blank	Water		4/6/2009 14:35	4/7/2009 09:10	<input checked="" type="checkbox"/>

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company
Project: West Fire Water Pond
Work Order: 0904139

Case Narrative

Batch 35421 Pesticide P qualifiers for known coelutions.

Batch 35427 Metals MS/MSD is an unrelated sample.

Batch R75496 Volatiles (Sample West Fire Water Pond) MS/MSD recoveries below control limits for 2-Chloroethyl vinyl ether that readily degrades in an acid matrix.

Batch R75537 Sulfate MS is an unrelated sample.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Sample ID: West Fire Water Pond

Collection Date: 4/6/2009 02:35 PM

Work Order: 0904139

Lab ID: 0904139-01

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			SW8081		Prep Date: 4/7/2009	Analyst: JLJ
4,4'-DDD	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
4,4'-DDE	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
4,4'-DDT	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Aldrin	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
alpha-BHC	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
beta-BHC	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Chlordane	ND		0.00050	mg/L	1	4/9/2009 11:33 AM
delta-BHC	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Dieldrin	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Endosulfan I	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Endosulfan II	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Endosulfan sulfate	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Endrin	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Endrin aldehyde	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
Endrin ketone	ND		0.00010	mg/L	1	4/9/2009 11:33 AM
gamma-BHC	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Heptachlor	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Heptachlor epoxide	ND		0.000050	mg/L	1	4/9/2009 11:33 AM
Methoxychlor	ND		0.00050	mg/L	1	4/9/2009 11:33 AM
Toxaphene	ND		0.00050	mg/L	1	4/9/2009 11:33 AM
Surr: Decachlorobiphenyl	116		54.9-145	%REC	1	4/9/2009 11:33 AM
Surr: Tetrachloro-m-xylene	115		51.5-142	%REC	1	4/9/2009 11:33 AM
PCBS			SW8082		Prep Date: 4/7/2009	Analyst: JLJ
Aroclor 1016	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1221	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1232	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1242	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1248	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1254	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Aroclor 1260	ND		0.000500	mg/L	1	4/9/2009 04:15 PM
Surr: Decachlorobiphenyl	67.3		54-140	%REC	1	4/9/2009 04:15 PM
Surr: Tetrachloro-m-xylene	72.3		53-137	%REC	1	4/9/2009 04:15 PM
MERCURY			SW7470		Prep Date: 4/7/2009	Analyst: JCJ
Mercury	ND		0.000200	mg/L	1	4/8/2009 02:54 PM
METALS			SW6020		Prep Date: 4/7/2009	Analyst: SKS
Aluminum	0.833		0.0100	mg/L	1	4/8/2009 01:00 PM
Arsenic	ND		0.00500	mg/L	1	4/8/2009 08:19 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Work Order: 0904139

Sample ID: West Fire Water Pond

Lab ID: 0904139-01

Collection Date: 4/6/2009 02:35 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Barium	0.0465		0.00500	mg/L	1	4/8/2009 08:19 AM
Beryllium	ND		0.00200	mg/L	1	4/8/2009 08:19 AM
Boron	0.0716		0.0200	mg/L	1	4/8/2009 08:19 AM
Cadmium	ND		0.00200	mg/L	1	4/8/2009 08:19 AM
Calcium	140		0.500	mg/L	1	4/8/2009 08:19 AM
Chromium	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Cobalt	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Copper	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Iron	1.21		0.200	mg/L	1	4/8/2009 08:19 AM
Lead	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Magnesium	69.2		0.200	mg/L	1	4/8/2009 01:00 PM
Manganese	0.0532		0.00500	mg/L	1	4/8/2009 08:19 AM
Molybdenum	0.00632		0.00500	mg/L	1	4/8/2009 08:19 AM
Nickel	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Potassium	3.67		0.200	mg/L	1	4/8/2009 08:19 AM
Selenium	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Silver	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Sodium	28.8		0.200	mg/L	1	4/8/2009 01:00 PM
Vanadium	ND		0.00500	mg/L	1	4/8/2009 08:19 AM
Zinc	0.00550		0.00500	mg/L	1	4/8/2009 01:00 PM

SEMIVOLATILES

SW8270

Prep Date: 4/7/2009

Analyst: ACN

1,2,4-Trichlorobenzene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
1,2-Dichlorobenzene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
1,3-Dichlorobenzene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
1,4-Dichlorobenzene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4,5-Trichlorophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4,6-Trichlorophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4-Dichlorophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4-Dimethylphenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4-Dinitrophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,4-Dinitrotoluene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2,6-Dinitrotoluene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Chloronaphthalene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Chlorophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Methylnaphthalene	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Methylphenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Nitroaniline	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
2-Nitrophenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
3&4-Methylphenol	ND	0.0050	mg/L	1	4/8/2009 01:18 PM
3,3'-Dichlorobenzidine	ND	0.0050	mg/L	1	4/8/2009 01:18 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Work Order: 0904139

Sample ID: West Fire Water Pond

Lab ID: 0904139-01

Collection Date: 4/6/2009 02:35 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4,6-Dinitro-2-methylphenol	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Bromophenyl phenyl ether	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Chloro-3-methylphenol	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Chloroaniline	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Chlorophenyl phenyl ether	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Nitroaniline	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
4-Nitrophenol	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Acenaphthene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Acenaphthylene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Anthracene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Benz(a)anthracene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Benzo(a)pyrene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Benzo(b)fluoranthene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Benzo(g,h,i)perylene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Benzo(k)fluoranthene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Bis(2-chloroethoxy)methane	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Bis(2-chloroethyl)ether	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Bis(2-chloroisopropyl)ether	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Bis(2-ethylhexyl)phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Butyl benzyl phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Carbazole	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Chrysene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Di-n-butyl phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Di-n-octyl phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Dibenz(a,h)anthracene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Dibenzofuran	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Diethyl phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Dimethyl phthalate	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Fluoranthene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Fluorene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Hexachlorobenzene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Hexachlorobutadiene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Hexachlorocyclopentadiene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Hexachloroethane	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Indeno(1,2,3-cd)pyrene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Isophorone	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
N-Nitrosodi-n-propylamine	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
N-Nitrosodiphenylamine	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Naphthalene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Work Order: 0904139

Sample ID: West Fire Water Pond

Lab ID: 0904139-01

Collection Date: 4/6/2009 02:35 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Nitrobenzene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Pentachlorophenol	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Phenanthrene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Phenol	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Pyrene	ND		0.0050	mg/L	1	4/8/2009 01:18 PM
Surr: 2,4,6-Tribromophenol	64.8		42-124	%REC	1	4/8/2009 01:18 PM
Surr: 2-Fluorobiphenyl	69.6		48-120	%REC	1	4/8/2009 01:18 PM
Surr: 2-Fluorophenol	65.1		20-120	%REC	1	4/8/2009 01:18 PM
Surr: 4-Terphenyl-d14	88.3		51-135	%REC	1	4/8/2009 01:18 PM
Surr: Nitrobenzene-d5	67.0		41-120	%REC	1	4/8/2009 01:18 PM
Surr: Phenol-d6	70.1		20-120	%REC	1	4/8/2009 01:18 PM
VOLATILES			SW8260	Analyst: PC		
1,1,1-Trichloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
1,1,2,2-Tetrachloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
1,1,2-Trichloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
1,1-Dichloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
1,1-Dichloroethene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
1,2-Dichloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
2-Butanone	ND		0.010	mg/L	1	4/8/2009 11:18 AM
2-Chloroethyl vinyl ether	ND		0.010	mg/L	1	4/8/2009 11:18 AM
2-Hexanone	ND		0.010	mg/L	1	4/8/2009 11:18 AM
4-Methyl-2-pentanone	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Acetone	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Benzene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Bromodichloromethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Bromoform	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Bromomethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Carbon disulfide	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Carbon tetrachloride	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Chlorobenzene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Chloroethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Chloroform	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Chloromethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
cis-1,3-Dichloropropene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Dibromochloromethane	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Ethylbenzene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
m,p-Xylene	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Methylene chloride	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Styrene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Tetrachloroethene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Work Order: 0904139

Sample ID: West Fire Water Pond

Lab ID: 0904139-01

Collection Date: 4/6/2009 02:35 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Toluene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
trans-1,3-Dichloropropene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Trichloroethene	ND		0.0050	mg/L	1	4/8/2009 11:18 AM
Vinyl acetate	ND		0.010	mg/L	1	4/8/2009 11:18 AM
Vinyl chloride	ND		0.0020	mg/L	1	4/8/2009 11:18 AM
Xylenes, Total	ND		0.015	mg/L	1	4/8/2009 11:18 AM
Surr: 1,2-Dichloroethane-d4	103		70-125	%REC	1	4/8/2009 11:18 AM
Surr: 4-Bromofluorobenzene	97.2		72-125	%REC	1	4/8/2009 11:18 AM
Surr: Dibromofluoromethane	97.9		71-125	%REC	1	4/8/2009 11:18 AM
Surr: Toluene-d8	94.6		75-125	%REC	1	4/8/2009 11:18 AM
ANIONS			E300			Analyst: IGF
Chloride	27.2		0.500	mg/L	1	4/7/2009 05:20 PM
Fluoride	1.02		0.100	mg/L	1	4/7/2009 05:20 PM
Nitrogen, Nitrate (As N)	ND		0.100	mg/L	1	4/7/2009 05:20 PM
Sulfate	635		10.0	mg/L	20	4/8/2009 08:43 PM
Nitrate/Nitrite (as N)	ND		0.100	mg/L	1	4/7/2009 05:20 PM
Surr: Selenate (surr)	98.6		85-115	%REC	1	4/7/2009 05:20 PM
Surr: Selenate (surr)	99.1		85-115	%REC	20	4/8/2009 08:43 PM
ALKALINITY			SM2320B			Analyst: TDW
Alkalinity, Bicarbonate (As CaCO3)	111		5.00	mg/L	1	4/9/2009 09:30 PM
Alkalinity, Carbonate (As CaCO3)	ND		5.00	mg/L	1	4/9/2009 09:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND		5.00	mg/L	1	4/9/2009 09:30 PM
Alkalinity, Total (As CaCO3)	111		5.00	mg/L	1	4/9/2009 09:30 PM
BOD			SM5210 B			Prep Date: 4/8/2009 Analyst: RPM
Biochemical Oxygen Demand	2.21		2.00	mg/L	1	4/8/2009 01:30 PM
CYANIDE			M4500CN E&G			Analyst: KKP
Cyanide	ND		0.0200	mg/L	1	4/10/2009 06:00 PM
Cyanide, Amenable to Chlorination	ND		0.0200	mg/L	1	4/10/2009 06:00 PM
CHEMICAL OXYGEN DEMAND			HACH 8000			Analyst: RPM
Chemical Oxygen Demand	ND		15.0	mg/L	1	4/9/2009 12:00 PM
COLIFORMS - SM 9222D			SM9222D			Analyst: DM
Fecal Coliform	ND		2.0	CFU/100ml	1	4/7/2009 01:00 PM
AMMONIA AS N			SM4500 NH3-B-F			Analyst: KKP
Nitrogen, Ammonia (as N)	0.127		0.0250	mg/L	1	4/10/2009 12:00 PM
PH			SM4500H+ B			Analyst: TDW
pH	8.29	H	0.100	pH units	1	4/7/2009 06:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company

Project: West Fire Water Pond

Work Order: 0904139

Sample ID: West Fire Water Pond

Lab ID: 0904139-01

Collection Date: 4/6/2009 02:35 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS			E420.1			Analyst: RPM
Phenolics, Total Recoverable	0.0610		0.0500	mg/L	1	4/9/2009 12:00 PM
TOTAL DISSOLVED SOLIDS			M2540C			Analyst: TDW
Total Dissolved Solids (Residue, Filterable)	1,120		10.0	mg/L	1	4/8/2009 07:00 PM
TOTAL SUSPENDED SOLIDS			M2540D			Analyst: TDW
Suspended Solids (Residue, Non- Filterable)	34.0		2.00	mg/L	1	4/7/2009 04:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 14-Apr-09

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **35421** Instrument ID **ECD_5** Method: **SW8081**

MBLK Sample ID: **PBLKW1-090407-35421** Units: **µg/L** Analysis Date: **4/9/2009 09:49 AM**

Client ID: Run ID: **ECD_5_090408B** SeqNo: **1643227** Prep Date: **4/7/2009** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	ND	0.10								
4,4'-DDE	ND	0.10								
4,4'-DDT	ND	0.10								
Aldrin	ND	0.050								
alpha-BHC	ND	0.050								
beta-BHC	ND	0.050								
Chlordane	ND	0.50								
delta-BHC	ND	0.050								
Dieldrin	ND	0.10								
Endosulfan I	ND	0.050								
Endosulfan II	ND	0.10								
Endosulfan sulfate	ND	0.10								
Endrin	ND	0.10								
Endrin aldehyde	ND	0.10								
Endrin ketone	ND	0.10								
gamma-BHC	ND	0.050								
Heptachlor	ND	0.050								
Heptachlor epoxide	ND	0.050								
Methoxychlor	ND	0.50								
Toxaphene	ND	0.50								
Surr: Decachlorobiphenyl	0.2174	0.10	0.2	0	109	54.9-145		0		
Surr: Tetrachloro-m-xylene	0.2364	0.050	0.2	0	118	51.5-142		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35421 Instrument ID ECD_5 Method: SW8081

LCS		Sample ID: PLCSW1-090407-35421			Units: µg/L		Analysis Date: 4/9/2009 10:24 AM			
Client ID:		Run ID: ECD_5_090408B			SeqNo: 1643228		Prep Date: 4/7/2009		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.5799	0.10	0.5	0	116	53-144	0			P
4,4'-DDE	0.564	0.10	0.5	0	113	55-144	0			
4,4'-DDT	0.6292	0.10	0.5	0	126	53-149	0			
Aldrin	0.2798	0.050	0.25	0	112	47-141	0			
alpha-BHC	0.2967	0.050	0.25	0	119	51-141	0			
beta-BHC	0.28	0.050	0.25	0	112	58-144	0			
delta-BHC	0.2787	0.050	0.25	0	111	48-146	0			
Dieldrin	0.578	0.10	0.5	0	116	56-144	0			
Endosulfan I	0.3013	0.050	0.25	0	121	55-141	0			
Endosulfan II	0.5897	0.10	0.5	0	118	57-144	0			P
Endosulfan sulfate	0.5658	0.10	0.5	0	113	58-145	0			
Endrin	0.616	0.10	0.5	0	123	60-163	0			
Endrin aldehyde	0.5962	0.10	0.5	0	119	59-158	0			
Endrin ketone	0.5857	0.10	0.5	0	117	59-154	0			
gamma-BHC	0.3045	0.050	0.25	0	122	53-142	0			
Heptachlor	0.3204	0.050	0.25	0	128	51-144	0			
Heptachlor epoxide	0.2806	0.050	0.25	0	112	55-142	0			
Methoxychlor	2.796	0.50	2.5	0	112	59-150	0			
Surr: Decachlorobiphenyl	0.2521	0.10	0.2	0	126	61-154	0			
Surr: Tetrachloro-m-xylene	0.2428	0.050	0.2	0	121	60-144	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35421 Instrument ID ECD_5 Method: SW8081

LCS Sample ID: PLCSDW1-090407-35421 Units: µg/L Analysis Date: 4/9/2009 10:58 AM

Client ID: Run ID: ECD_5_090408B SeqNo: 1643229 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.5562	0.10	0.5	0	111	53-144	0			P
4,4'-DDE	0.5399	0.10	0.5	0	108	55-144	0			
4,4'-DDT	0.5993	0.10	0.5	0	120	53-149	0			
Aldrin	0.2671	0.050	0.25	0	107	47-141	0			
alpha-BHC	0.2817	0.050	0.25	0	113	51-141	0			
beta-BHC	0.2652	0.050	0.25	0	106	58-144	0			
delta-BHC	0.2672	0.050	0.25	0	107	48-146	0			
Dieldrin	0.5547	0.10	0.5	0	111	56-144	0			
Endosulfan I	0.292	0.050	0.25	0	117	55-141	0			
Endosulfan II	0.5686	0.10	0.5	0	114	57-144	0			P
Endosulfan sulfate	0.5573	0.10	0.5	0	111	58-145	0			
Endrin	0.5887	0.10	0.5	0	118	60-163	0			
Endrin aldehyde	0.5642	0.10	0.5	0	113	59-158	0			
Endrin ketone	0.5649	0.10	0.5	0	113	59-154	0			
gamma-BHC	0.2903	0.050	0.25	0	116	53-142	0			
Heptachlor	0.307	0.050	0.25	0	123	51-144	0			
Heptachlor epoxide	0.268	0.050	0.25	0	107	55-142	0			
Methoxychlor	2.729	0.50	2.5	0	109	59-150	0			
Surr: Decachlorobiphenyl	0.2399	0.10	0.2	0	120	61-154	0			
Surr: Tetrachloro-m-xylene	0.2322	0.050	0.2	0	116	60-144	0			

The following samples were analyzed in this batch:

0904139-011

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35422 Instrument ID ECD_7 Method: SW8082

MBLK Sample ID: PBLKW2-090407-35422 Units: µg/L Analysis Date: 4/9/2009 02:32 PM

Client ID: Run ID: ECD_7_090408B SeqNo: 1643279 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	0.1869	0.050	0.2	0	93.5	54-140	0			
Surr: Tetrachloro-m-xylene	0.168	0.050	0.2	0	84	53-137	0			

LCS Sample ID: PLCSW2-090407-35422 Units: µg/L Analysis Date: 4/9/2009 03:07 PM

Client ID: Run ID: ECD_7_090408B SeqNo: 1643280 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.299	0.50	5	0	86	54-138	0			
Aroclor 1260	4.571	0.50	5	0	91.4	57-136	0			
Surr: Decachlorobiphenyl	0.1793	0.050	0.2	0	89.7	54-140	0			
Surr: Tetrachloro-m-xylene	0.1732	0.050	0.2	0	86.6	53-137	0			

LCSD Sample ID: PLCSW2-090407-35422 Units: µg/L Analysis Date: 4/9/2009 03:41 PM

Client ID: Run ID: ECD_7_090408B SeqNo: 1643281 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.298	0.50	5	0	86	54-138	4.299	0.0333	20	
Aroclor 1260	4.576	0.50	5	0	91.5	57-136	4.571	0.109	20	
Surr: Decachlorobiphenyl	0.1796	0.050	0.2	0	89.8	54-140	0.1793	0.156	20	
Surr: Tetrachloro-m-xylene	0.1729	0.050	0.2	0	86.4	53-137	0.1732	0.185	20	

The following samples were analyzed in this batch:

0904139-01H

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35427 Instrument ID ICP7500 Method: SW6020

MBLK Sample ID: MBLKW3-040709-35427 Units: mg/L Analysis Date: 4/8/2009 05:30 AM
Client ID: Run ID: ICP7500_090407A SeqNo: 1641281 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	0.0005079	0.0020								J
Boron	ND	0.050								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Silver	ND	0.0050								
Sodium	ND	0.20								
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35427 Instrument ID ICP7500 Method: SW6020

LCS Sample ID: MLCSW3-040709-35427 Units: mg/L Analysis Date: 4/8/2009 05:36 AM

Client ID: Run ID: ICP7500_090407A SeqNo: 1641282 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04902	0.0050	0.05	0	98	80-120	0			
Barium	0.05109	0.0050	0.05	0	102	80-120	0			
Beryllium	0.04787	0.0020	0.05	0	95.7	80-120	0			
Boron	0.4753	0.050	0.5	0	95.1	80-120	0			
Cadmium	0.04819	0.0020	0.05	0	96.4	80-120	0			
Calcium	4.773	0.50	5	0	95.5	80-120	0			
Chromium	0.04575	0.0050	0.05	0	91.5	80-120	0			
Cobalt	0.04809	0.0050	0.05	0	96.2	80-120	0			
Copper	0.04524	0.0050	0.05	0	90.5	80-120	0			
Iron	4.661	0.20	5	0	93.2	80-120	0			
Lead	0.04749	0.0050	0.05	0	95	80-120	0			
Magnesium	4.664	0.20	5	0	93.3	80-120	0			
Manganese	0.04625	0.0050	0.05	0	92.5	80-120	0			
Molybdenum	0.04733	0.0050	0.05	0	94.7	80-120	0			
Nickel	0.04744	0.0050	0.05	0	94.9	80-120	0			
Potassium	4.613	0.20	5	0	92.3	80-120	0			
Selenium	0.04629	0.0050	0.05	0	92.6	80-120	0			
Silver	0.04796	0.0050	0.05	0	95.9	80-120	0			
Sodium	4.654	0.20	5	0	93.1	80-120	0			
Vanadium	0.04775	0.0050	0.05	0	95.5	80-120	0			
Zinc	0.05016	0.0050	0.05	0	100	80-120	0			

LCS Sample ID: MLCSW3-040709-35427 Units: mg/L Analysis Date: 4/8/2009 12:54 PM

Client ID: Run ID: ICPMS03_090408A SeqNo: 1641801 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1092	0.010	0.1	0	109	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35427 Instrument ID ICP7500 Method: SW6020

MS		Sample ID: 0904106-04DMS		Units: mg/L		Analysis Date: 4/8/2009 06:19 AM				
Client ID:		Run ID: ICP7500_090407A		SeqNo: 1641288		Prep Date: 4/7/2009		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	6.519	0.010	0.05	6.476	86	80-120	0			EO
Arsenic	0.1836	0.0050	0.05	0.1463	74.6	80-120	0			S
Barium	1.303	0.0050	0.05	1.304	-2	80-120	0			SO
Beryllium	0.04713	0.0020	0.05	0.001108	92	80-120	0			
Boron	0.6549	0.050	0.5	0.1943	92.1	80-120	0			
Cadmium	0.04439	0.0020	0.05	0.0006773	87.4	80-120	0			
Calcium	116.1	0.50	5	118.9	-56	80-120	0			SO
Chromium	0.05093	0.0050	0.05	0.007837	86.2	80-120	0			
Cobalt	0.04986	0.0050	0.05	0.006574	86.6	80-120	0			
Copper	0.0457	0.0050	0.05	0.005088	81.2	80-120	0			
Iron	19.96	0.20	5	16.4	71.2	80-120	0			S
Lead	0.04876	0.0050	0.05	0.005418	86.7	80-120	0			
Magnesium	56.57	0.20	5	54.65	38.4	80-120	0			SO
Manganese	0.4393	0.0050	0.05	0.4222	34.2	80-120	0			SO
Molybdenum	0.05201	0.0050	0.05	0.008481	87.1	80-120	0			
Nickel	0.07511	0.0050	0.05	0.03439	81.4	80-120	0			
Potassium	6.34	0.20	5	2.27	81.4	80-120	0			
Selenium	0.04585	0.0050	0.05	0.002348	87	80-120	0			
Silver	0.04313	0.0050	0.05	0.0001978	85.9	80-120	0			
Sodium	99.91	0.20	5	99.7	4.2	80-120	0			SO
Vanadium	0.06579	0.0050	0.05	0.02029	91	80-120	0			
Zinc	0.07421	0.0050	0.05	0.0322	84	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35427 Instrument ID ICP7500 Method: SW6020

MSD Sample ID: 0904106-04DMSD Units: mg/L Analysis Date: 4/8/2009 06:31 AM

Client ID: Run ID: ICP7500_090407A SeqNo: 1641289 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	7.054	0.010	0.05	6.476	1160	80-120	6.519	7.88	15	SEO
Arsenic	0.192	0.0050	0.05	0.1463	91.4	80-120	0.1836	4.47	15	
Barium	1.362	0.0050	0.05	1.304	116	80-120	1.303	4.43	15	O
Beryllium	0.04818	0.0020	0.05	0.001108	94.1	80-120	0.04713	2.2	15	
Boron	0.676	0.050	0.5	0.1943	96.3	80-120	0.6549	3.17	15	
Cadmium	0.04582	0.0020	0.05	0.0006773	90.3	80-120	0.04439	3.17	15	
Calcium	119.6	0.50	5	118.9	14	80-120	116.1	2.97	15	SO
Chromium	0.05237	0.0050	0.05	0.007837	89.1	80-120	0.05093	2.79	15	
Cobalt	0.05129	0.0050	0.05	0.006574	89.4	80-120	0.04986	2.83	15	
Copper	0.0466	0.0050	0.05	0.005088	83	80-120	0.0457	1.95	15	
Iron	20.95	0.20	5	16.4	91	80-120	19.96	4.84	15	
Lead	0.05094	0.0050	0.05	0.005418	91	80-120	0.04876	4.37	15	
Magnesium	59.13	0.20	5	54.65	89.6	80-120	56.57	4.43	15	O
Manganese	0.4609	0.0050	0.05	0.4222	77.4	80-120	0.4393	4.8	15	SO
Molybdenum	0.05339	0.0050	0.05	0.008481	89.8	80-120	0.05201	2.62	15	
Nickel	0.07826	0.0050	0.05	0.03439	87.7	80-120	0.07511	4.11	15	
Potassium	6.712	0.20	5	2.27	88.8	80-120	6.34	5.7	15	
Selenium	0.04637	0.0050	0.05	0.002348	88	80-120	0.04585	1.13	15	
Silver	0.04481	0.0050	0.05	0.0001978	89.2	80-120	0.04313	3.82	15	
Sodium	103.9	0.20	5	99.7	84	80-120	99.91	3.92	15	O
Vanadium	0.06726	0.0050	0.05	0.02029	93.9	80-120	0.06579	2.21	15	
Zinc	0.07687	0.0050	0.05	0.0322	89.3	80-120	0.07421	3.52	15	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35427 Instrument ID ICP7500 Method: SW6020

DUP Sample ID: 0904106-04DDUP Units: mg/L Analysis Date: 4/8/2009 05:49 AM

Client ID: Run ID: ICP7500_090407A SeqNo: 1641284 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1451	0.0050	0	0	0	0-0	0.1463	0.824	25	
Barium	1.329	0.0050	0	0	0	0-0	1.304	1.9	25	
Beryllium	0.0009348	0.0020	0	0	0	0-0	0.001108	0	25	J
Boron	0.1901	0.050	0	0	0	0-0	0.1943	2.19	25	
Cadmium	ND	0.0020	0	0	0	0-0	0.0006773	0	25	
Calcium	120.1	0.50	0	0	0	0-0	118.9	1	25	
Chromium	0.007835	0.0050	0	0	0	0-0	0.007837	0.0255	25	
Cobalt	0.00662	0.0050	0	0	0	0-0	0.006574	0.697	25	
Copper	0.004854	0.0050	0	0	0	0-0	0.005088	0	25	J
Iron	16.68	0.20	0	0	0	0-0	16.4	1.69	25	
Lead	0.005477	0.0050	0	0	0	0-0	0.005418	1.08	25	
Magnesium	55.49	0.20	0	0	0	0-0	54.65	1.53	25	
Manganese	0.4284	0.0050	0	0	0	0-0	0.4222	1.46	25	
Molybdenum	0.007455	0.0050	0	0	0	0-0	0.008481	12.9	25	
Nickel	0.03483	0.0050	0	0	0	0-0	0.03439	1.27	25	
Potassium	2.284	0.20	0	0	0	0-0	2.27	0.615	25	
Selenium	ND	0.0050	0	0	0	0-0	0.002348	0	25	
Silver	ND	0.0050	0	0	0	0-0	0.0001978	0	25	
Sodium	101.2	0.20	0	0	0	0-0	99.7	1.49	25	
Vanadium	0.02009	0.0050	0	0	0	0-0	0.02029	0.991	25	
Zinc	0.03123	0.0050	0	0	0	0-0	0.0322	3.06	25	

DUP Sample ID: 0904106-04DDUP Units: mg/L Analysis Date: 4/8/2009 04:18 PM

Client ID: Run ID: ICPMS03_090408A SeqNo: 1642838 Prep Date: 4/7/2009 DF: 20

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	7.922	0.20	0	0	0	0-0	8.334	5.07	25	

The following samples were analyzed in this batch:

0904139-01E

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35438A Instrument ID Mercury Method: SW7470

MBLK Sample ID: GBLKW1-040709-35438A Units: mg/L Analysis Date: 4/8/2009 01:56 PM

Client ID: Run ID: MERCURY_090408B SeqNo: 1641825 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.000055	0.00020								J

LCS Sample ID: GLCSW1-040709-35438A Units: mg/L Analysis Date: 4/8/2009 01:58 PM

Client ID: Run ID: MERCURY_090408B SeqNo: 1641826 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00514	0.00020	0.005	0	103	85-115	0			

MS Sample ID: 0903709-01AMS Units: mg/L Analysis Date: 4/8/2009 02:07 PM

Client ID: Run ID: MERCURY_090408B SeqNo: 1641829 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00538	0.00020	0.005	-0.000024	108	85-115	0			

MSD Sample ID: 0903709-01AMSD Units: mg/L Analysis Date: 4/8/2009 02:09 PM

Client ID: Run ID: MERCURY_090408B SeqNo: 1641830 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00542	0.00020	0.005	-0.000024	109	85-115	0.00538	0.741	20	

DUP Sample ID: 0903709-01ADUP Units: mg/L Analysis Date: 4/8/2009 02:05 PM

Client ID: Run ID: MERCURY_090408B SeqNo: 1641828 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	-0.000024	0	20	

The following samples were analyzed in this batch:

0904139-01E

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441 Instrument ID SV-5 Method: SW8270

MBLK Sample ID: SBLKW2-090408-35441 Units: µg/L Analysis Date: 4/8/2009 11:46 AM
 Client ID: Run ID: SV-5_090408A SeqNo: 1641783 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
2-Nitroaniline	ND	5.0								
2-Nitrophenol	ND	5.0								
3&4-Methylphenol	ND	5.0								
3,3'-Dichlorobenzidine	ND	5.0								
3-Nitroaniline	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
4-Bromophenyl phenyl ether	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
4-Nitroaniline	ND	5.0								
4-Nitrophenol	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Anthracene	ND	5.0								
Benz(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	5.0								
Benzo(b)fluoranthene	ND	5.0								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Chrysene	ND	5.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441		Instrument ID SV-5		Method: SW8270				
Di-n-butyl phthalate	ND	5.0						
Di-n-octyl phthalate	ND	5.0						
Dibenz(a,h)anthracene	ND	5.0						
Dibenzofuran	ND	5.0						
Diethyl phthalate	ND	5.0						
Dimethyl phthalate	ND	5.0						
Fluoranthene	ND	5.0						
Fluorene	ND	5.0						
Hexachlorobenzene	ND	5.0						
Hexachlorobutadiene	ND	5.0						
Hexachlorocyclopentadiene	ND	5.0						
Hexachloroethane	ND	5.0						
Indeno(1,2,3-cd)pyrene	ND	5.0						
Isophorone	ND	5.0						
N-Nitrosodi-n-propylamine	ND	5.0						
N-Nitrosodiphenylamine	ND	5.0						
Naphthalene	ND	5.0						
Nitrobenzene	ND	5.0						
Pentachlorophenol	ND	5.0						
Phenanthrene	ND	5.0						
Phenol	ND	5.0						
Pyrene	ND	5.0						
Surr: 2,4,6-Tribromophenol	71.12	5.0	100	0	71.1	42-124	0	
Surr: 2-Fluorobiphenyl	75.8	5.0	100	0	75.8	48-120	0	
Surr: 2-Fluorophenol	69.62	5.0	100	0	69.6	20-120	0	
Surr: 4-Terphenyl-d14	94.13	5.0	100	0	94.1	51-135	0	
Surr: Nitrobenzene-d5	78.17	5.0	100	0	78.2	41-120	0	
Surr: Phenol-d6	77.45	5.0	100	0	77.4	20-120	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441 Instrument ID SV-5 Method: SW8270

LCS Sample ID: SLCSW2-090408-35441 Units: µg/L Analysis Date: 4/8/2009 12:09 PM
 Client ID: Run ID: SV-5_090408A SeqNo: 1641785 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	41.58	5.0	50	0	83.2	50-120	0			
1,2-Dichlorobenzene	40.05	5.0	50	0	80.1	50-120	0			
1,3-Dichlorobenzene	38.74	5.0	50	0	77.5	50-120	0			
1,4-Dichlorobenzene	38.91	5.0	50	0	77.8	55-120	0			
2,4,5-Trichlorophenol	88.72	5.0	100	0	88.7	50-120	0			
2,4,6-Trichlorophenol	82.65	5.0	100	0	82.7	50-120	0			
2,4-Dichlorophenol	85.65	5.0	100	0	85.7	50-120	0			
2,4-Dimethylphenol	86.58	5.0	100	0	86.6	50-120	0			
2,4-Dinitrophenol	82.73	5.0	100	0	82.7	40-120	0			
2,4-Dinitrotoluene	43.37	5.0	50	0	86.7	50-120	0			
2,6-Dinitrotoluene	43.37	5.0	50	0	86.7	55-120	0			
2-Chloronaphthalene	50.12	5.0	50	0	100	55-135	0			
2-Chlorophenol	81.71	5.0	100	0	81.7	50-120	0			
2-Methylnaphthalene	41.32	5.0	50	0	82.6	55-120	0			
2-Methylphenol	86.3	5.0	100	0	86.3	50-120	0			
2-Nitroaniline	44.13	5.0	50	0	88.3	55-120	0			
2-Nitrophenol	84.27	5.0	100	0	84.3	55-120	0			
3&4-Methylphenol	132.9	5.0	150	0	88.6	55-120	0			
3,3'-Dichlorobenzidine	41.95	5.0	50	0	83.9	30-120	0			
3-Nitroaniline	39.65	5.0	50	0	79.3	40-120	0			
4,6-Dinitro-2-methylphenol	84.46	5.0	100	0	84.5	50-120	0			
4-Bromophenyl phenyl ether	43.4	5.0	50	0	86.8	55-120	0			
4-Chloro-3-methylphenol	93	5.0	100	0	93	50-120	0			
4-Chloroaniline	37.43	5.0	50	0	74.9	30-120	0			
4-Chlorophenyl phenyl ether	40.52	5.0	50	0	81	55-120	0			
4-Nitroaniline	43.1	5.0	50	0	86.2	50-120	0			
4-Nitrophenol	100.5	5.0	100	0	100	45-120	0			
Acenaphthene	42.4	5.0	50	0	84.8	55-120	0			
Acenaphthylene	41.53	5.0	50	0	83.1	55-120	0			
Anthracene	43.18	5.0	50	0	86.4	55-120	0			
Benz(a)anthracene	38.68	5.0	50	0	77.4	55-120	0			
Benzo(a)pyrene	45.98	5.0	50	0	92	55-120	0			
Benzo(b)fluoranthene	45.05	5.0	50	0	90.1	55-120	0			
Benzo(g,h,i)perylene	45.15	5.0	50	0	90.3	55-120	0			
Benzo(k)fluoranthene	46.72	5.0	50	0	93.4	55-120	0			
Bis(2-chloroethoxy)methane	57.41	5.0	50	0	115	55-120	0			
Bis(2-chloroethyl)ether	41.23	5.0	50	0	82.5	50-120	0			
Bis(2-chloroisopropyl)ether	38.41	5.0	50	0	76.8	50-120	0			
Bis(2-ethylhexyl)phthalate	44	5.0	50	0	88	50-125	0			
Butyl benzyl phthalate	50.5	5.0	50	0	101	50-120	0			
Carbazole	43.06	5.0	50	0	86.1	55-120	0			
Chrysene	44.29	5.0	50	0	88.6	55-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441		Instrument ID SV-5		Method: SW8270			
Di-n-butyl phthalate	44.86	5.0	50	0	89.7	55-120	0
Di-n-octyl phthalate	42.73	5.0	50	0	85.5	50-120	0
Dibenz(a,h)anthracene	40.16	5.0	50	0	80.3	55-120	0
Dibenzofuran	41.48	5.0	50	0	83	55-120	0
Diethyl phthalate	45.65	5.0	50	0	91.3	55-120	0
Dimethyl phthalate	44.76	5.0	50	0	89.5	55-120	0
Fluoranthene	40.45	5.0	50	0	80.9	55-120	0
Fluorene	42.02	5.0	50	0	84	55-120	0
Hexachlorobenzene	42.25	5.0	50	0	84.5	55-120	0
Hexachlorobutadiene	42.2	5.0	50	0	84.4	55-120	0
Hexachlorocyclopentadiene	38.84	5.0	50	0	77.7	50-120	0
Hexachloroethane	42.18	5.0	50	0	84.4	55-120	0
Indeno(1,2,3-cd)pyrene	40.37	5.0	50	0	80.7	55-120	0
Isophorone	50.58	5.0	50	0	101	55-120	0
N-Nitrosodi-n-propylamine	44.12	5.0	50	0	88.2	50-120	0
N-Nitrosodiphenylamine	42.23	5.0	50	0	84.5	55-120	0
Naphthalene	42.34	5.0	50	0	84.7	55-120	0
Nitrobenzene	43.2	5.0	50	0	86.4	55-120	0
Pentachlorophenol	82.7	5.0	100	0	82.7	55-120	0
Phenanthrene	42.26	5.0	50	0	84.5	55-120	0
Phenol	88.46	5.0	100	0	88.5	50-120	0
Pyrene	48.56	5.0	50	0	97.1	55-120	0
<i>Surr: 2,4,6-Tribromophenol</i>	<i>85.19</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>85.2</i>	<i>42-124</i>	<i>0</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>77.31</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>77.3</i>	<i>48-120</i>	<i>0</i>
<i>Surr: 2-Fluorophenol</i>	<i>78.35</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>78.4</i>	<i>20-120</i>	<i>0</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>76.35</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>76.4</i>	<i>51-135</i>	<i>0</i>
<i>Surr: Nitrobenzene-d5</i>	<i>81.78</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>81.8</i>	<i>41-120</i>	<i>0</i>
<i>Surr: Phenol-d6</i>	<i>82.56</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>82.6</i>	<i>20-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441 Instrument ID SV-5 Method: SW8270

LCSD Sample ID: SLCS DW2-090408-35441 Units: µg/L Analysis Date: 4/8/2009 12:32 PM

Client ID: Run ID: SV-5_090408A SeqNo: 1641787 Prep Date: 4/7/2009 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	40.34	5.0	50	0	80.7	50-120	41.58	3.02	20	
1,2-Dichlorobenzene	39.26	5.0	50	0	78.5	50-120	40.05	2	20	
1,3-Dichlorobenzene	37.15	5.0	50	0	74.3	50-120	38.74	4.19	20	
1,4-Dichlorobenzene	39.65	5.0	50	0	79.3	55-120	38.91	1.9	20	
2,4,5-Trichlorophenol	90.25	5.0	100	0	90.2	50-120	88.72	1.7	20	
2,4,6-Trichlorophenol	85.62	5.0	100	0	85.6	50-120	82.65	3.52	20	
2,4-Dichlorophenol	85.16	5.0	100	0	85.2	50-120	85.65	0.581	20	
2,4-Dimethylphenol	84.84	5.0	100	0	84.8	50-120	86.58	2.03	20	
2,4-Dinitrophenol	84.5	5.0	100	0	84.5	40-120	82.73	2.12	20	
2,4-Dinitrotoluene	43.92	5.0	50	0	87.8	50-120	43.37	1.24	20	
2,6-Dinitrotoluene	43.92	5.0	50	0	87.8	55-120	43.37	1.24	20	
2-Chloronaphthalene	51.77	5.0	50	0	104	55-135	50.12	3.24	20	
2-Chlorophenol	79.38	5.0	100	0	79.4	50-120	81.71	2.9	20	
2-Methylnaphthalene	39.31	5.0	50	0	78.6	55-120	41.32	4.99	20	
2-Methylphenol	82.72	5.0	100	0	82.7	50-120	86.3	4.24	20	
2-Nitroaniline	46.66	5.0	50	0	93.3	55-120	44.13	5.58	20	
2-Nitrophenol	87.94	5.0	100	0	87.9	55-120	84.27	4.26	20	
3&4-Methylphenol	135.1	5.0	150	0	90.1	55-120	132.9	1.64	20	
3,3'-Dichlorobenzidine	41.28	5.0	50	0	82.6	30-120	41.95	1.61	20	
3-Nitroaniline	41.56	5.0	50	0	83.1	40-120	39.65	4.71	20	
4,6-Dinitro-2-methylphenol	84.35	5.0	100	0	84.4	50-120	84.46	0.125	20	
4-Bromophenyl phenyl ether	43.61	5.0	50	0	87.2	55-120	43.4	0.471	20	
4-Chloro-3-methylphenol	90.59	5.0	100	0	90.6	50-120	93	2.63	20	
4-Chloroaniline	34.81	5.0	50	0	69.6	30-120	37.43	7.28	20	
4-Chlorophenyl phenyl ether	42.26	5.0	50	0	84.5	55-120	40.52	4.2	20	
4-Nitroaniline	41.55	5.0	50	0	83.1	50-120	43.1	3.65	20	
4-Nitrophenol	99.41	5.0	100	0	99.4	45-120	100.5	1.04	20	
Acenaphthene	43.24	5.0	50	0	86.5	55-120	42.4	1.97	20	
Acenaphthylene	43.93	5.0	50	0	87.9	55-120	41.53	5.62	20	
Anthracene	42.57	5.0	50	0	85.1	55-120	43.18	1.44	20	
Benz(a)anthracene	38.22	5.0	50	0	76.4	55-120	38.68	1.2	20	
Benzo(a)pyrene	41.45	5.0	50	0	82.9	55-120	45.98	10.4	20	
Benzo(b)fluoranthene	44.98	5.0	50	0	90	55-120	45.05	0.147	20	
Benzo(g,h,i)perylene	43.03	5.0	50	0	86.1	55-120	45.15	4.82	20	
Benzo(k)fluoranthene	45.03	5.0	50	0	90.1	55-120	46.72	3.66	20	
Bis(2-chloroethoxy)methane	54.41	5.0	50	0	109	55-120	57.41	5.37	20	
Bis(2-chloroethyl)ether	40.54	5.0	50	0	81.1	50-120	41.23	1.68	20	
Bis(2-chloroisopropyl)ether	36.56	5.0	50	0	73.1	50-120	38.41	4.94	20	
Bis(2-ethylhexyl)phthalate	42.87	5.0	50	0	85.7	50-125	44	2.59	20	
Butyl benzyl phthalate	49.71	5.0	50	0	99.4	50-120	50.5	1.57	20	
Carbazole	42.04	5.0	50	0	84.1	55-120	43.06	2.39	20	
Chrysene	44.11	5.0	50	0	88.2	55-120	44.29	0.405	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: 35441	Instrument ID SV-5			Method: SW8270					
Di-n-butyl phthalate	43.1	5.0	50	0	86.2	55-120	44.86	4.02	20
Di-n-octyl phthalate	40.82	5.0	50	0	81.6	50-120	42.73	4.56	20
Dibenz(a,h)anthracene	39.35	5.0	50	0	78.7	55-120	40.16	2.05	20
Dibenzofuran	41.68	5.0	50	0	83.4	55-120	41.48	0.481	20
Diethyl phthalate	44.76	5.0	50	0	89.5	55-120	45.65	1.97	20
Dimethyl phthalate	44.97	5.0	50	0	89.9	55-120	44.76	0.465	20
Fluoranthene	39.58	5.0	50	0	79.2	55-120	40.45	2.17	20
Fluorene	43.01	5.0	50	0	86	55-120	42.02	2.33	20
Hexachlorobenzene	42.29	5.0	50	0	84.6	55-120	42.25	0.0936	20
Hexachlorobutadiene	42	5.0	50	0	84	55-120	42.2	0.488	20
Hexachlorocyclopentadiene	40.32	5.0	50	0	80.6	50-120	38.84	3.72	20
Hexachloroethane	41.3	5.0	50	0	82.6	55-120	42.18	2.1	20
Indeno(1,2,3-cd)pyrene	38.47	5.0	50	0	76.9	55-120	40.37	4.83	20
Isophorone	50.29	5.0	50	0	101	55-120	50.58	0.56	20
N-Nitrosodi-n-propylamine	43.76	5.0	50	0	87.5	50-120	44.12	0.804	20
N-Nitrosodiphenylamine	42.57	5.0	50	0	85.1	55-120	42.23	0.789	20
Naphthalene	42.02	5.0	50	0	84	55-120	42.34	0.771	20
Nitrobenzene	43.05	5.0	50	0	86.1	55-120	43.2	0.34	20
Pentachlorophenol	84.55	5.0	100	0	84.5	55-120	82.7	2.2	20
Phenanthrene	41.55	5.0	50	0	83.1	55-120	42.26	1.7	20
Phenol	84.31	5.0	100	0	84.3	50-120	88.46	4.8	20
Pyrene	49.66	5.0	50	0	99.3	55-120	48.56	2.24	20
Surr: 2,4,6-Tribromophenol	85.36	5.0	100	0	85.4	42-124	85.19	0.208	20
Surr: 2-Fluorobiphenyl	78.77	5.0	100	0	78.8	48-120	77.31	1.88	20
Surr: 2-Fluorophenol	74.25	5.0	100	0	74.3	20-120	78.35	5.37	20
Surr: 4-Terphenyl-d14	78.18	5.0	100	0	78.2	51-135	76.35	2.36	20
Surr: Nitrobenzene-d5	81.01	5.0	100	0	81	41-120	81.78	0.948	20
Surr: Phenol-d6	78.71	5.0	100	0	78.7	20-120	82.56	4.78	20

The following samples were analyzed in this batch:

0904139-01J

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75496 Instrument ID VOA2 Method: SW8260

MBLK Sample ID: VBLKW-040809-R75496 Units: µg/L Analysis Date: 4/8/2009 10:54 AM
 Client ID: Run ID: VOA2_090408A SeqNo: 1642847 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	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	51.39	5.0	50	0	103	70-125	0			
Surr: 4-Bromofluorobenzene	48.55	5.0	50	0	97.1	72-125	0			
Surr: Dibromofluoromethane	48.35	5.0	50	0	96.7	71-125	0			
Surr: Toluene-d8	47.08	5.0	50	0	94.2	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75496 Instrument ID VOA2 Method: SW8260

LCS Sample ID: VSLCSW-040809-R75496 Units: µg/L Analysis Date: 4/8/2009 10:05 AM

Client ID: Run ID: VOA2_090408A SeqNo: 1642846 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	53.52	5.0	50	0	107	80-120	0			
1,1,2,2-Tetrachloroethane	51	5.0	50	0	102	72-120	0			
1,1,2-Trichloroethane	49.5	5.0	50	0	99	80-120	0			
1,1-Dichloroethane	52.7	5.0	50	0	105	76-120	0			
1,1-Dichloroethene	53.22	5.0	50	0	106	73-124	0			
1,2-Dichloroethane	51.64	5.0	50	0	103	78-120	0			
2-Butanone	110.1	10	100	0	110	58-132	0			
2-Chloroethyl vinyl ether	113.1	10	100	0	113	74-120	0			
2-Hexanone	116.3	10	100	0	116	61-130	0			
4-Methyl-2-pentanone	112.2	10	100	0	112	65-127	0			
Acetone	117.9	10	100	0	118	59-137	0			
Benzene	49.52	5.0	50	0	99	73-121	0			
Bromodichloromethane	53.91	5.0	50	0	108	80-120	0			
Bromoform	51.42	5.0	50	0	103	79-120	0			
Bromomethane	49.16	5.0	50	0	98.3	66-137	0			
Carbon disulfide	108.8	10	100	0	109	68-141	0			
Carbon tetrachloride	54.5	5.0	50	0	109	75-124	0			
Chlorobenzene	47.93	5.0	50	0	95.9	80-120	0			
Chloroethane	51.32	5.0	50	0	103	76-121	0			
Chloroform	49.54	5.0	50	0	99.1	80-120	0			
Chloromethane	48.67	5.0	50	0	97.3	67-123	0			
cis-1,3-Dichloropropene	55.78	5.0	50	0	112	80-120	0			
Dibromochloromethane	48.85	5.0	50	0	97.7	80-120	0			
Ethylbenzene	49.86	5.0	50	0	99.7	80-120	0			
m,p-Xylene	99.46	10	100	0	99.5	78-121	0			
Methylene chloride	51.04	10	50	0	102	65-133	0			
Styrene	49.37	5.0	50	0	98.7	80-120	0			
Tetrachloroethene	49.37	5.0	50	0	98.7	79-120	0			
Toluene	48.59	5.0	50	0	97.2	80-120	0			
trans-1,3-Dichloropropene	49.17	5.0	50	0	98.3	80-120	0			
Trichloroethene	50.13	5.0	50	0	100	80-120	0			
Vinyl acetate	110.7	10	100	0	111	67-139	0			
Vinyl chloride	50.11	2.0	50	0	100	70-127	0			
Xylenes, Total	149.4	15	150	0	99.6	80-120	0			
Surr: 1,2-Dichloroethane-d4	50.48	5.0	50	0	101	70-125	0			
Surr: 4-Bromofluorobenzene	49.8	5.0	50	0	99.6	72-125	0			
Surr: Dibromofluoromethane	48.29	5.0	50	0	96.6	71-125	0			
Surr: Toluene-d8	47.7	5.0	50	0	95.4	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75496 Instrument ID VOA2 Method: SW8260

MS		Sample ID: 0904139-01AMS			Units: µg/L		Analysis Date: 4/8/2009 12:07 PM			
Client ID: West Fire Water Pond		Run ID: VOA2_090408A			SeqNo: 1642849		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	49.8	5.0	50	0	99.6	80-120	0			
1,1,2,2-Tetrachloroethane	48.19	5.0	50	0	96.4	72-120	0			
1,1,2-Trichloroethane	48.04	5.0	50	0	96.1	80-120	0			
1,1-Dichloroethane	51.6	5.0	50	0	103	76-120	0			
1,1-Dichloroethene	49.81	5.0	50	0	99.6	73-124	0			
1,2-Dichloroethane	50.93	5.0	50	0	102	78-120	0			
2-Butanone	106.9	10	100	0	107	58-132	0			
2-Chloroethyl vinyl ether	3.299	10	100	0	3.3	74-120	0			JS
2-Hexanone	109.6	10	100	0	110	61-130	0			
4-Methyl-2-pentanone	108.6	10	100	0	109	65-127	0			
Acetone	111.3	10	100	0	111	59-137	0			
Benzene	48.46	5.0	50	0	96.9	73-121	0			
Bromodichloromethane	53.07	5.0	50	0	106	80-120	0			
Bromoform	49.77	5.0	50	0	99.5	79-120	0			
Bromomethane	44.8	5.0	50	0	89.6	66-137	0			
Carbon disulfide	102.6	10	100	0	103	68-141	0			
Carbon tetrachloride	49.85	5.0	50	0	99.7	75-124	0			
Chlorobenzene	47.14	5.0	50	0	94.3	80-120	0			
Chloroethane	49.11	5.0	50	0	98.2	76-121	0			
Chloroform	50.14	5.0	50	0	100	80-120	0			
Chloromethane	48.1	5.0	50	0	96.2	67-123	0			
cis-1,3-Dichloropropene	53.69	5.0	50	0	107	80-120	0			
Dibromochloromethane	47.39	5.0	50	0	94.8	80-120	0			
Ethylbenzene	48.08	5.0	50	0	96.2	80-120	0			
m,p-Xylene	97.1	10	100	0	97.1	78-121	0			
Methylene chloride	51.18	10	50	0	102	65-133	0			
Styrene	48.03	5.0	50	0	96.1	80-120	0			
Tetrachloroethene	46.23	5.0	50	0	92.5	79-120	0			
Toluene	47.03	5.0	50	0	94.1	80-120	0			
trans-1,3-Dichloropropene	47.43	5.0	50	0	94.9	80-120	0			
Trichloroethene	48.91	5.0	50	0	97.8	80-120	0			
Vinyl acetate	101.2	10	100	0	101	67-139	0			
Vinyl chloride	47.86	2.0	50	0	95.7	70-127	0			
Xylenes, Total	145.3	15	150	0	96.8	80-120	0			
Surr: 1,2-Dichloroethane-d4	51.17	5.0	50	0	102	70-125	0			
Surr: 4-Bromofluorobenzene	49.98	5.0	50	0	100	72-125	0			
Surr: Dibromofluoromethane	49.54	5.0	50	0	99.1	71-125	0			
Surr: Toluene-d8	47.75	5.0	50	0	95.5	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75496 Instrument ID VOA2 Method: SW8260

MSD		Sample ID: 0904139-01AMSD		Units: µg/L		Analysis Date: 4/8/2009 12:31 PM				
Client ID: West Fire Water Pond		Run ID: VOA2_090408A		SeqNo: 1642850		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	48.85	5.0	50	0	97.7	80-120	49.8	1.93	20	
1,1,2,2-Tetrachloroethane	48.04	5.0	50	0	96.1	72-120	48.19	0.308	20	
1,1,2-Trichloroethane	48.71	5.0	50	0	97.4	80-120	48.04	1.39	20	
1,1-Dichloroethane	51.59	5.0	50	0	103	76-120	51.6	0.0122	20	
1,1-Dichloroethene	48.17	5.0	50	0	96.3	73-124	49.81	3.33	20	
1,2-Dichloroethane	51.62	5.0	50	0	103	78-120	50.93	1.34	20	
2-Butanone	101.3	10	100	0	101	58-132	106.9	5.37	20	
2-Chloroethyl vinyl ether	ND	10	100	0	0	74-120	3.299	0	20	S
2-Hexanone	109.2	10	100	0	109	61-130	109.6	0.352	20	
4-Methyl-2-pentanone	109.4	10	100	0	109	65-127	108.6	0.754	20	
Acetone	112.1	10	100	0	112	59-137	111.3	0.676	20	
Benzene	48.38	5.0	50	0	96.8	73-121	48.46	0.167	20	
Bromodichloromethane	53.36	5.0	50	0	107	80-120	53.07	0.557	20	
Bromoform	49.98	5.0	50	0	100	79-120	49.77	0.421	20	
Bromomethane	46.75	5.0	50	0	93.5	66-137	44.8	4.27	20	
Carbon disulfide	101.4	10	100	0	101	68-141	102.6	1.11	20	
Carbon tetrachloride	45.92	5.0	50	0	91.8	75-124	49.85	8.2	20	
Chlorobenzene	47.48	5.0	50	0	95	80-120	47.14	0.726	20	
Chloroethane	49.33	5.0	50	0	98.7	76-121	49.11	0.448	20	
Chloroform	50.37	5.0	50	0	101	80-120	50.14	0.455	20	
Chloromethane	46.92	5.0	50	0	93.8	67-123	48.1	2.48	20	
cis-1,3-Dichloropropene	54.64	5.0	50	0	109	80-120	53.69	1.77	20	
Dibromochloromethane	48.1	5.0	50	0	96.2	80-120	47.39	1.47	20	
Ethylbenzene	47.86	5.0	50	0	95.7	80-120	48.08	0.462	20	
m,p-Xylene	95.98	10	100	0	96	78-121	97.1	1.16	20	
Methylene chloride	51.84	10	50	0	104	65-133	51.18	1.29	20	
Styrene	48.53	5.0	50	0	97.1	80-120	48.03	1.05	20	
Tetrachloroethene	44.32	5.0	50	0	88.6	79-120	46.23	4.21	20	
Toluene	47.48	5.0	50	0	95	80-120	47.03	0.943	20	
trans-1,3-Dichloropropene	48.39	5.0	50	0	96.8	80-120	47.43	2	20	
Trichloroethene	47.5	5.0	50	0	95	80-120	48.91	2.93	20	
Vinyl acetate	112.4	10	100	0	112	67-139	101.2	10.5	20	
Vinyl chloride	45.44	2.0	50	0	90.9	70-127	47.86	5.19	20	
Xylenes, Total	144.9	15	150	0	96.6	80-120	145.3	0.228	20	
Surr: 1,2-Dichloroethane-d4	50.28	5.0	50	0	101	70-125	51.17	1.75	20	
Surr: 4-Bromofluorobenzene	50.18	5.0	50	0	100	72-125	49.98	0.405	20	
Surr: Dibromofluoromethane	49.43	5.0	50	0	98.9	71-125	49.54	0.219	20	
Surr: Toluene-d8	48.05	5.0	50	0	96.1	75-125	47.75	0.644	20	

The following samples were analyzed in this batch: 0904139-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **35456** Instrument ID **WetChem** Method: **SM5210 B**

MBLK Sample ID: **WBLKW1-040809-35456** Units: **mg/L** Analysis Date: **4/8/2009 01:30 PM**

Client ID: Run ID: **WETCHEM_090413B** SeqNo: **1645705** Prep Date: **4/8/2009** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	ND	2.0								

LCS Sample ID: **WLCSW1-040809-35456** Units: **mg/L** Analysis Date: **4/8/2009 01:30 PM**

Client ID: Run ID: **WETCHEM_090413B** SeqNo: **1645706** Prep Date: **4/8/2009** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	209	2.0	198	0	106	85-115	0			

LCSD Sample ID: **WLCSD1-040809-35456** Units: **mg/L** Analysis Date: **4/8/2009 01:30 PM**

Client ID: Run ID: **WETCHEM_090413B** SeqNo: **1645722** Prep Date: **4/8/2009** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	209	2.0	198	0	106	85-115	209	0	20	

The following samples were analyzed in this batch:

0904139-01G

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75428** Instrument ID **WetChem** Method: **SM4500H+ B**

LCS Sample ID: **WLCSW1-040709-R75428** Units: **pH units** Analysis Date: **4/7/2009 06:00 PM**

Client ID: Run ID: **WETCHEM_090407G** SeqNo: **1641408** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.02	0.10	6	0	100	90-110	0			

DUP Sample ID: **0904139-01fdup** Units: **pH units** Analysis Date: **4/7/2009 06:00 PM**

Client ID: **West Fire Water Pond** Run ID: **WETCHEM_090407G** SeqNo: **1641430** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.35	0.10	0	0	0	0-0	8.29	0.721	20	H

The following samples were analyzed in this batch:

0904139-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75443** Instrument ID **Balance1** Method: **M2540D**

MBLK Sample ID: **BLANK-R75443** Units: **mg/L** Analysis Date: **4/7/2009 04:00 PM**
 Client ID: Run ID: **BALANCE1_090407B** SeqNo: **1641698** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	ND	2.0								

LCS Sample ID: **LCS-R75443** Units: **mg/L** Analysis Date: **4/7/2009 04:00 PM**
 Client ID: Run ID: **BALANCE1_090407B** SeqNo: **1641699** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	105	2.0	100	0	105	78-120		0		

DUP Sample ID: **0904142-01ADUP** Units: **mg/L** Analysis Date: **4/7/2009 04:00 PM**
 Client ID: Run ID: **BALANCE1_090407B** SeqNo: **1641691** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	45	2.0	0	0	0	0-0	45	0	20	

The following samples were analyzed in this batch: 0904139-01F

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75467** Instrument ID **ICS3000** Method: **E300**

MBLK Sample ID: **WBLKW1-040709-R75467** Units: **mg/L** Analysis Date: **4/7/2009 12:59 PM**

Client ID: Run ID: **ICS3000_090407D** SeqNo: **1642223** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Nitrate/Nitrite (as N)	ND	0.10								
Surr: Selenate (surr)	4.856	0.10	5	0	97.1	85-115	0			

LCS Sample ID: **WLCSW1-040709-R75467** Units: **mg/L** Analysis Date: **4/7/2009 01:23 PM**

Client ID: Run ID: **ICS3000_090407D** SeqNo: **1642224** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.83	0.50	20	0	99.2	90-110	0			
Fluoride	4.121	0.10	4	0	103	90-110	0			
Nitrogen, Nitrate (As N)	4.045	0.10	4	0	101	90-110	0			
Nitrate/Nitrite (as N)	8.135	0.10	8	0	102	90-110	0			
Surr: Selenate (surr)	4.879	0.10	5	0	97.6	85-115	0			

MS Sample ID: **0904139-01FMS** Units: **mg/L** Analysis Date: **4/7/2009 06:32 PM**

Client ID: **West Fire Water Pond** Run ID: **ICS3000_090407D** SeqNo: **1642232** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	122.7	5.0	100	26.81	95.9	80-120	0			
Fluoride	21.22	1.0	20	0.28	105	80-120	0			
Nitrogen, Nitrate (As N)	19.38	1.0	20	0	96.9	80-120	0			
Nitrate/Nitrite (as N)	39.38	1.0	40	0	98.5	80-120	0			
Surr: Selenate (surr)	48.13	1.0	50	0	96.3	85-115	0			

DUP Sample ID: **0904139-01FDUP** Units: **mg/L** Analysis Date: **4/7/2009 06:08 PM**

Client ID: **West Fire Water Pond** Run ID: **ICS3000_090407D** SeqNo: **1642231** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	26.8	5.0	0	0	0	0-0	26.81	0.041	20	
Fluoride	ND	1.0	0	0	0	0-0	0.28	0	20	
Nitrogen, Nitrate (As N)	ND	1.0	0	0	0	0-0	0	0	20	
Nitrate/Nitrite (as N)	ND	1.0	0	0	0	0-0	0	0	20	
Surr: Selenate (surr)	48.28	1.0	50	0	96.6	85-115	48.25	0.0477	20	

The following samples were analyzed in this batch:

0904139-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75498** Instrument ID: **Balance1** Method: **M2540C**

MBLK	Sample ID: BLANK-R75498				Units: mg/L		Analysis Date: 4/8/2009 07:00 PM			
Client ID:	Run ID: BALANCE1_090408E				SeqNo: 1642906		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	ND	10								

LCS	Sample ID: LCS-R75498				Units: mg/L		Analysis Date: 4/8/2009 07:00 PM			
Client ID:	Run ID: BALANCE1_090408E				SeqNo: 1642907		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	976	10	1000	0	97.6	85-115	0			

DUP	Sample ID: 0904114-19EDUP					Units: mg/L		Analysis Date: 4/8/2009 07:00 PM		
Client ID:	Run ID: BALANCE1_090408E				SeqNo: 1642903		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	12	10	0	0	0	0-0	12	2.4E-09	20	

DUP	Sample ID: 0904139-01FDUP					Units: mg/L		Analysis Date: 4/8/2009 07:00 PM		
Client ID: West Fire Water Pond			Run ID: BALANCE1_090408E			SeqNo: 1642905		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	1132	10	0	0	0	0-0	1120	1.07	20	

The following samples were analyzed in this batch:

0904139-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75500** Instrument ID **WetChem** Method: **SM2320B**

MBLK Sample ID: **WBLKW1-040909-R75500** Units: **mg/L** Analysis Date: **4/9/2009 09:30 PM**

Client ID: Run ID: **WETCHEM_090409B** SeqNo: **1642917** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0								
Alkalinity, Carbonate (As CaCO3)	ND	5.0								
Alkalinity, Hydroxide (As CaCO3)	ND	5.0								
Alkalinity, Total (As CaCO3)	ND	5.0								

LCS Sample ID: **WLCSW1-040909-R75500** Units: **mg/L** Analysis Date: **4/9/2009 09:30 PM**

Client ID: Run ID: **WETCHEM_090409B** SeqNo: **1642918** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	961.2	5.0	1000	0	96.1	80-120	0			
Alkalinity, Total (As CaCO3)	961.2	5.0	1000	0	96.1	80-120	0			

DUP Sample ID: **0904062-01bdup** Units: **mg/L** Analysis Date: **4/9/2009 09:30 PM**

Client ID: Run ID: **WETCHEM_090409B** SeqNo: **1642932** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Carbonate (As CaCO3)	20190	5.0	0	0	0	0-0	20180	0.00991	20	
Alkalinity, Hydroxide (As CaCO3)	2883	5.0	0	0	0	0-0	3125	8.06	20	
Alkalinity, Total (As CaCO3)	23070	5.0	0	0	0	0-0	23310	1.03	20	

The following samples were analyzed in this batch:

0904139-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75537 Instrument ID ICS3000 Method: E300

MBLK Sample ID: WBLKW1-040809-R75537 Units: mg/L Analysis Date: 4/8/2009 01:36 PM

Client ID: Run ID: ICS3000_090408A SeqNo: 1643189 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.428	0.50								J
Surr: Selenate (surr)	4.962	0.10	5	0	99.2	85-115	0			

LCS Sample ID: WLCSW1-040809-R75537 Units: mg/L Analysis Date: 4/8/2009 02:00 PM

Client ID: Run ID: ICS3000_090408A SeqNo: 1643190 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	20.01	0.50	20	0	100	90-110	0			
Surr: Selenate (surr)	4.983	0.10	5	0	99.7	85-115	0			

MS Sample ID: 0904179-02BMS Units: mg/L Analysis Date: 4/8/2009 08:20 PM

Client ID: Run ID: ICS3000_090408A SeqNo: 1643209 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	159.5	0.50	10	152.5	69.6	80-120	0			SEO
Surr: Selenate (surr)	5.181	0.10	5	0	104	85-115	0			

DUP Sample ID: 0904179-02BDUP Units: mg/L Analysis Date: 4/8/2009 07:56 PM

Client ID: Run ID: ICS3000_090408A SeqNo: 1643208 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	152.6	0.50	0	0	0	0-0	152.5	0.0341	20	E
Surr: Selenate (surr)	5.105	0.10	5	0	102	85-115	5.101	0.0784	20	

The following samples were analyzed in this batch:

0904139-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75542** Instrument ID **WetChem** Method: **Hach 8000**

MBLK Sample ID: **WBLKW1-040909-R75542** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: Run ID: **WETCHEM_090409G** SeqNo: **1643266** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	15								

LCS Sample ID: **WLCSW1-040909-R75542** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: Run ID: **WETCHEM_090409G** SeqNo: **1643267** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	98	15	100	0	98	85-115	0			

MS Sample ID: **0904139-01Bms** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: **West Fire Water Pond** Run ID: **WETCHEM_090409G** SeqNo: **1643275** Prep Date: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	128	30	100	14	114	80-120	0			

DUP Sample ID: **0904139-01BDUP** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: **West Fire Water Pond** Run ID: **WETCHEM_090409G** SeqNo: **1643274** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	15	15	0	0	0	0-0	14	6.9	20	

The following samples were analyzed in this batch:

0904139-01B

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75544** Instrument ID **UV-2450** Method: **E420.1**

MBLK Sample ID: **WBLKW1-040909-R75544** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: Run ID: **WETCHEM_090409H** SeqNo: **1643293** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050								

LCS Sample ID: **WLCSW1-040909-R75544** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: Run ID: **WETCHEM_090409H** SeqNo: **1643294** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.497	0.050	0.5	0	99.4	80-120	0			

MS Sample ID: **0904139-01KMS** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: **West Fire Water Pond** Run ID: **WETCHEM_090409H** SeqNo: **1643304** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.516	0.050	0.5	0.061	91	80-120	0			

DUP Sample ID: **0904139-01KDUP** Units: **mg/L** Analysis Date: **4/9/2009 12:00 PM**

Client ID: **West Fire Water Pond** Run ID: **WETCHEM_090409H** SeqNo: **1643302** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.061	0.050	0	0	0	0-0	0.061	0	20	

The following samples were analyzed in this batch:

0904139-01K

Client: Navajo Refining Company
Work Order: 0904139
Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: **R75549** Instrument ID **WetChem** Method: **SM9222D**

MBLK Sample ID: **WBLKW1-040709-R75549** Units: **CFU/100ml** Analysis Date: **4/7/2009 01:00 PM**

Client ID: Run ID: **WETCHEM_090407H** SeqNo: **1643353** Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fecal Coliform	ND	2.0								

The following samples were analyzed in this batch:

0904139-01L

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75599 Instrument ID UV-2450 Method: M4500CN E&

MBLK Sample ID: WBLKW2-041009-R75599 Units: mg/L Analysis Date: 4/10/2009 06:00 PM

Client ID: Run ID: UV-2450_090410B SeqNo: 1644767 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020								
Cyanide, Amenable to Chlorination	ND	0.020								

LCS Sample ID: WLCSW2-041009-R75599 Units: mg/L Analysis Date: 4/10/2009 06:00 PM

Client ID: Run ID: UV-2450_090410B SeqNo: 1644768 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.18	0.020	0.2	0	90	80-120	0			

MS Sample ID: 0904103-01BMS Units: mg/L Analysis Date: 4/10/2009 06:00 PM

Client ID: Run ID: UV-2450_090410B SeqNo: 1644771 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.184	0.020	0.2	0.002	91	80-120	0			

DUP Sample ID: 0904103-01BDUP Units: mg/L Analysis Date: 4/10/2009 06:00 PM

Client ID: Run ID: UV-2450_090410B SeqNo: 1644770 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	0.002	0	20	
Cyanide, Amenable to Chlorination	ND	0.020	0	0	0	0-0	0	0	0	

The following samples were analyzed in this batch: 0904139-01D

Client: Navajo Refining Company
 Work Order: 0904139
 Project: West Fire Water Pond

QC BATCH REPORT

Batch ID: R75600 Instrument ID UV-2450 Method: SM4500 NH3-

MBLK Sample ID: WBLKW1-041009-R75600 Units: mg/L Analysis Date: 4/10/2009 12:00 PM

Client ID: Run ID: UV-2450_090410C SeqNo: 1644778 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	ND	0.025								

LCS Sample ID: WLCSW1-041009-R75600 Units: mg/L Analysis Date: 4/10/2009 12:00 PM

Client ID: Run ID: UV-2450_090410C SeqNo: 1644779 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.19	0.025	0.2	0	95	80-120	0			

MS Sample ID: 0904139-01CMS Units: mg/L Analysis Date: 4/10/2009 12:00 PM

Client ID: West Fire Water Pond Run ID: UV-2450_090410C SeqNo: 1644782 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.324	0.025	0.2	0.127	98.5	80-120	0			

DUP Sample ID: 0904139-01CDUP Units: mg/L Analysis Date: 4/10/2009 12:00 PM

Client ID: West Fire Water Pond Run ID: UV-2450_090410C SeqNo: 1644781 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.13	0.025	0	0	0	0-0	0.127	2.33	20	

The following samples were analyzed in this batch:

0904139-01C

ALS Laboratory Group

Date: 14-Apr-09

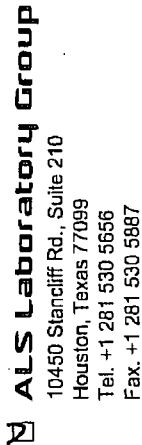
Client: Navajo Refining Company
Project: West Fire Water Pond
WorkOrder: 0904139

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	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

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
CFU/100ml	
mg/L	Milligrams per Liter
pH units	



Chain of Custody Form

ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

Page 1 of 2

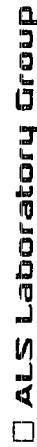
Customer Information						Project Information						ALS Project Manager:																		ALS Work Order #:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

1. Any changes must be made in writing once samples and COC form have been submitted to ALS Laboratory Group.

2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.

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**3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185**

ALS Work Order #: 20-15

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Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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1. **Introduction**
 2. **Background**
 3. **Methodology**
 4. **Results**
 5. **Discussion**
 6. **Conclusion**
 7. **References**
 8. **Appendix**
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 13. **Author Contributions**
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 26. **Funding**
 27. **Conflict of Interest**
 28. **Publisher's Note**
 29. **Copyright**
 30. **Disclaimer**

ALS Laboratory Group

Sample Receipt Checklist

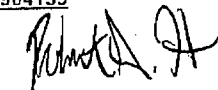
Client Name: NAVAJO REFINING

Date/Time Received: 4/7/2009 09:10

Work Order Number 0904139

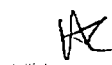
Received by: RSZ

Checklist completed by


Signature

4/7/09
Date

Reviewed by


Initials

4/7/09
Date

Matrix: waters

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.6c</u>	<u>002</u>	
Cooler(s)/Kit(s):	<u>2119</u>		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Adjusted?

Checked by

Login Notes: Trip blank not on COC; logged in without analysis.

Client contacted:

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

0404154

PRIORITY OVERNIGHT

Emp# 692503 00:20 07APR09

TRK# 9391 8022 9569 FORM 0201

77099 -TX-US

IAH

Deliver By:
07APR09

43 JGQA

TUE



ALS Laboratory Group

10450 Standcliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 4/6/09 Time: 1615
Name: Aaron Strain
Company: Navajo Refining Co.

Seal Broken By:

Date: 4.7.09



ENVIRODYNE LABORATORIES, INC.

11011 Brooklet Dr. #230 Houston, Texas 77099

April 10, 2009

ALS Group USA, Corp.
Glenda Ramos
10450 STANCLIFF RD
HOUSTON, TX 77099

Re: **ALS-0904139-01M WEST FIRE WATER**

COC#: **04072009**

Dear Glenda Ramos :

Envirodyne Laboratories, Inc. (ELI) received sample(s) on April 07, 2009 at 10:00 for the analysis enclosed.

The analytical data provided relates only to the sample(s) as received in this laboratory report. ELI certifies that all results are NELAC compliant and performed in accordance with the referenced method. Any exceptions are listed below and/or noted with a qualifier. Any reproductions of this laboratory report should be in full and only with the written authorization from the client.

This report contains a total of 3 pages not including the Chain of Custody.

Thank you for selecting ELI for your analytical needs. If you have questions regarding these results, please contact us at 281-568-7880.

Sincerely,

Laura Bonjonia

Laura Bonjonia
Lab Manager



Certificate No. T104704265-08B-TX

Qualifiers: ND - Not Detected at the Reporting Limit

L - Analyzed by third party laboratory

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

E - Result above quantitation range

H - Hold time exceeded

* - Refer to sample comments



Envirodyne Laboratories, Inc.

11011 Brooklet Drive Suite 230
Houston, Texas 77099

Phone: 281-568-7880

Fax: 281-568-8004

www.envirodyne.com

Certificate of Analysis

Client Sample ID: ALS-0904139-01M WEST FIRE WATER

Collection Date: 04/06/2009 14:35

Lab Sample ID: AB66940

Collected by: RH

Analyses	Result	Units	RL	Qual	Method	Date Analyzed	Analyst
MICRO							
E. coli	<1	CFUs/100 ml	1	H	m-ColiBlue 24	04/07/2009 13:30	DC

Qualifiers: ND - Not Detected at the Reporting Limit

L - Analyzed by third party laboratory

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

E - Result above quantitation range

H - Hold time exceeded

* - Refer to sample comments

Date: 07-Apr-09
COC ID: 7568
Due Date **17-Apr-09**

Subcontractor:
Envirodyne Laboratories, Inc.
11011 Brooklet, #230
Houston, TX 77099

Page 1 of 1

TEL: (281) 568-7880
FAX: (281) 568-8004
Acct #:

Parameter/Method Request for Analysis
analysis (NA)

Project Information

Customer Information

Purchase Order	Project Name	0904139
Work Order	Project Number	
Company Name	Bill To Company	ALS Group USA, Corp.
Send Report To	Inv Attn	Accounts Payable
Address	Address	10450 Stanchiff Rd, Suite 210
City/State/Zip	City/State/Zip	Houston, Texas 77099-4338
Phone	Phone	(281) 530-5656
Fax	Fax	(281) 530-5887
eMail Address	eMail CC	jaylynn.thibault@alsenviro.com glenda.ramos@alsenviro.com

[illegible]

0904139-01M (West Fire Water Pond)

7AB66940

Comments:

Please analyze for E.coli. Sample already out of hold. ONLY ONE SAMPLE BOTTLE!!!!

[Signature]
Religious, Inc.

4/7/08 1:35
Date/Time

Relinquished by:

Date/Time

Received by:

Date/Time

Conclusions

PRIS
Reporting Checklist

Relinquished by:

Date/Time

Received by:

Date/Time

2

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



Environmental Division

04-Jun-08

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 746-5468
Fax: (505) 746-5421

Re: Well Water Iron

Work Order : **0805714**

Dear Aaron,

ALS Laboratory Group received 1 sample on 5/31/2008 08:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Laboratory Group 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 Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Glenda H. Ramos

Jeffrey L Croston
Project Manager



Certificate No: T104704231-08-TX

ALS Group USA, Corp.

Part of the **ALS Laboratory Group**

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338

Phone: (281) 530-5656 Fax: (281) 530-5887

www.alsglobal.com www.elabi.com

A Campbell Brothers Limited Company

ALS Laboratory Group*Date: 04-Jun-08*

Client: Navajo Refining Company
Project: Well Water Iron
Work Order: 0805714

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
0805714-01	Well Water Iron	Liquid		5/30/2008 13:50	5/31/2008 08:45	<input type="checkbox"/>

ALS Laboratory Group

Date: 04-Jun-08

Client: Navajo Refining Company
Project: Well Water Iron
Work Order: 0805714

Case Narrative

Batch 30078 Metals MS/MSD was an unrelated sample.

ALS Laboratory Group

Date: 04-Jun-08

Client: Navajo Refining Company

Project: Well Water Iron

Work Order: 0805714

Sample ID: Well Water Iron

Lab ID: 0805714-01

Collection Date: 5/30/2008 01:50 PM

Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
HARDNESS BY CALCULATION						
Hardness (As CaCO3)	741		M2340 B 2.00	mg/L	1	Analyst: SKS 6/3/2008
ICP METALS, TOTAL - SW6020A						
Calcium	194		SW6020 1.00	mg/L	2	Prep Date: 6/3/2008 Analyst: ALR 6/3/2008 04:11 PM
Iron	1.14		0.400	mg/L	2	6/3/2008 04:11 PM
Magnesium	62.4		0.400	mg/L	2	6/3/2008 04:11 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

ALS Laboratory Group

Client: Navajo Refining Company
Work Order: 0805714
Project: Well Water Iron

Date: 04-Jun-08

QC BATCH REPORT

Batch ID: **30078** Instrument ID **ICPMS02** Method: **SW6020**

MBLK Sample ID: **MBLKW1-060308** Units: **mg/L** Analysis Date: **6/3/2008 03:58 PM**

Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1410875** Prep Date: **6/3/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	ND	0.50								
Iron	ND	0.20								
Magnesium	ND	0.20								

LCS Sample ID: **MLCSW1-060308** Units: **mg/L** Analysis Date: **6/3/2008 04:04 PM**

Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1410876** Prep Date: **6/3/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	4.808	0.50	5	0	96.2	80-120	0			
Iron	5.029	0.20	5	0	101	80-120	0			
Magnesium	4.803	0.20	5	0	96.1	80-120	0			

MS Sample ID: **0805638-04CMS** Units: **mg/L** Analysis Date: **6/3/2008 06:45 PM**

Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1411135** Prep Date: **6/3/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	951.8	0.50	5	908.2	872	80-120	0			SEO
Iron	5.663	0.20	5	1.031	92.6	80-120	0			
Magnesium	164.8	0.20	5	146.7	362	80-120	0			SO

MSD Sample ID: **0805638-04CMSD** Units: **mg/L** Analysis Date: **6/3/2008 06:51 PM**

Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1411136** Prep Date: **6/3/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	918.6	0.50	5	908.2	208	80-120	951.8	3.55	15	SEO
Iron	5.549	0.20	5	1.031	90.4	80-120	5.663	2.03	15	
Magnesium	159	0.20	5	146.7	246	80-120	164.8	3.58	15	SO

DUP Sample ID: **0805638-04CDUP** Units: **mg/L** Analysis Date: **6/3/2008 04:24 PM**

Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1410918** Prep Date: **6/3/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	1.051	0.20	0	0	0	0-0	1.031	1.92	25	

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

Client: Navajo Refining Company
Work Order: 0805714
Project: Well Water Iron

QC BATCH REPORT

Batch ID: **30078** Instrument ID **ICPMS02** Method: **SW6020**

DUP Sample ID: **0805638-04CDUP** Units: **mg/L** Analysis Date: **6/3/2008 04:49 PM**
Client ID: Run ID: **ICPMS02_080603A** SeqNo: **1410921** Prep Date: **6/3/2008** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	1224	50	0	0	0	0-0	999	20.2	25	
Magnesium	206.5	20	0	0	0	0-0	169.7	19.6	25	

The following samples were analyzed in this batch:

0805714-01A

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

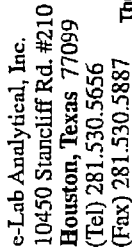
R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range



Chain of Custody Form

e-Lab Analytical, Inc.
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185



The Chain of Custody is a Legal Document. All Information must be completed accurately.

[illegible]

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to e-Lab Analytical, Inc.

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e-Lab Analytical, Inc.

Sample Receipt Checklist

Client Name NAVAJO REFINING

Date/Time Received: 5/31/2008 08:45

Work Order Number 0805714

Received by: SLT

Checklist completed by

Sharon Ayer 5/31/08
Signature Date

Reviewed by

SL 6/2/08
Initials Date

Matrix:

Liquid

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.5</u>	<u>002</u>	
Cooler(s)/Kit(s):	<u>2307</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Adjusted? _____ Checked by _____

Login Notes:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____



ALS e-Lab Analytical
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. 281.530.5656
Fax. 281.530.5887

CUSTODY SEAL

Date: 5/30/08 Time: 1615
Name: Artich Stancliff
Company: Navajo Refining Co.

Seal Broken By:

Date:

5/31/08

ORIGIN ID: ROWA (800) 748-3311
NAVAJO REFINING
NAVAJO REFINING COMPANY
501 E. MAIN STREET

ARTESIA, NM 88210
UNITED STATES US

SHIP Date: 30MAY08
NetWgt: 19.0 LB MAN
System#: 185697/CAFE2353
Account: S 113684186

TO SAMPLE RECEIVING

(281) 530-5656

ELAB

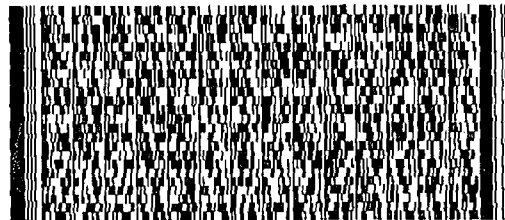
10450 STANCLIFF SUITE 210

FedEx
Express



CL5050107/22/23

HOUSTON, TX 77099



Delivery Address
Barcodes

BILL RECIPIENT

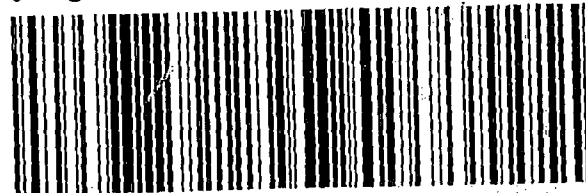
FedEx
TRK#
0201

9391 8021 7072

SATURDAY ### A2
PRIORITY OVERNIGHT

X0 JGQA

77099
TX-US
IAH



Emp# 493208 30MAY08 ROWA

Part # 155140-434 NRT 1-04

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, October 24, 2008 8:23 AM
To: 'Moore, Darrell'
Subject: RE: Sumps At Lovington (GW-014)

Darrell:

Re: We have 25 sumps at Lovington and would like to close about half of them by filling them in and capping them. Do we need any approval from you? Yes, since there is ground water contamination and sumps are regulated under the permit. The main concern is sumps within process areas and whether they have mechanical integrity. If you could provide a list of all the sumps and identify sumps within process areas vs. non-process areas and identify the ones you would like to close, along with a brief summary of the method of closure, we could move forward on this quickly.

Provision 8 of the permit states the following:

8. Below Ground Tank/Sump~ All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than December 15, 2002 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD annually by December 31 of each year.

Questions:

- 1) Were any of the sumps originally constructed with secondary containment and leak detection?
- 2) Were any of the sumps that were not originally constructed as per Item 1 above later retrofitted with secondary containment and leak detection?
- 3) Did any of the sumps undergo an annual mechanical integrity test by December 15, 2007? Any sumps that passed should be ok to close. Any sumps that did or do not pass and reside within process areas should be investigated as potential point sources of contamination at the refinery.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Thursday, October 23, 2008 4:02 PM
To: Chavez, Carl J, EMNRD
Subject: Sumps At Lovington

10/24/2008

Carl

We have been going over our sumps at Lovington and the annual testing that is required by OCD. We have a list of 25 sumps at Lovington and we would like to close about half of them by filling them in and capping them. Do we need any approval from you?

Environmental Manager for Water and Waste
Navajo Refining Company, LLC
Phone Number 575-746-5281
Cell Number 575-703-5058
Fax Number 575-746-5451

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10/24/2008

Chavez, Carl J, EMNRD

From: Hall, Sharon [Sharon.Hall@arcadis-us.com]
Sent: Wednesday, June 11, 2008 8:02 AM
To: Byrd, Jeff; Chavez, Carl J, EMNRD
Cc: Lian, Kuohui
Subject: MW-90 Log
Attachments: MW-90.pdf

Here you go Gentlemen, the MW-90 log. Thank you Kuohui.
Regards,
Sharon

From: Lian, Kuohui
Sent: Wednesday, June 11, 2008 8:52 AM
To: Hall, Sharon
Subject: RE: MW-90 results (limited)

From: Hall, Sharon
Sent: Wednesday, June 11, 2008 8:39 AM
To: Byrd, Jeff
Cc: Chavez, Carl J, EMNRD; Lian, Kuohui
Subject: RE: MW-90 results (limited)

Jeff, our draftsman is working on a number of logs now for a report submittal. I asked him to do MW-90 first. He will have them completed this week. I will be on vacation for the rest of the week beginning noon today. Kuohui will email you the log when it is complete.
Regards,
Sharon

From: Byrd, Jeff [mailto:Jeff.Byrd@hollycorp.com]
Sent: Wednesday, June 11, 2008 8:28 AM
To: Hall, Sharon
Cc: Chavez, Carl J, EMNRD
Subject: FW: MW-90 results (limited)

Sharon:

Could you provide me and Carl with the lithologic log for MW-90?

Thanks;

Jefferson L. Byrd, EI
Environmental Scientist
Off: 575-746-5468
Cell: 575-703-5068

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, June 10, 2008 5:00 PM

6/11/2008

To: Byrd, Jeff
Subject: RE: MW-90 results (limited)

Jeff:

Please send me the lithologic log for MW-90 too. Thank you Sir.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Byrd, Jeff [mailto:Jeff.Byrd@hollycorp.com]
Sent: Tuesday, June 10, 2008 3:57 PM
To: Chavez, Carl J, EMNRD
Subject: MW-90 results (limited)

Carl:

My apologies for not sending these earlier, I thought I had. Attached are the results for the sampling of MW-90. The VOA's were broken in shipment and has since been resampled. I will forward those as soon as I get them.

Regards;

Jefferson L. Byrd, EI
Environmental Scientist
Off: 575-746-5468
Cell: 575-703-5068

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6/11/2008



ARCADIS

WELL LOG

WELL NO.

MW-90

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER: MT000980.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Area of Concern Group-1 Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 6/29/07

DATE COMPLETED: 6/29/07

DRILLER: M. Bates

ELEVATION (SURF.): —

LOGGER: B. Kolb

ELEVATION (T.O.C.): —

FILE NAME: MW-90.dat

UNIQUE NUMBER: 31-009-00339

STATIC WATER LEVEL: 8.9' MEAS. PT.: Ground Level DATE: 6/29/07

HOLE SIZE(S): 12" TOTAL DEPTH: -20.0'

SURFACE COMPLETION: Locking Well Vault w/4"x4"x6" Pad

TYPES DEPTHS

GROUT TYPE: Portland Cement -1.0' to Surface

SEAL TYPE: Bentonite Chips -3.0' to -1.0'

SCREEN PACK: 8/16 Brady Sand -20.0' to -3.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank -5.0' to +2.0'±

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots -20.0' to -5.0'

PLUG BACK: —

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Shovel							SAND red, fine to very fine grained, 10% SILT, loose.	
		Split Spoon				0.6			SAND red, fine to very fine grained, 10% SILT, loose.	
-5		Split Spoon				0.4			SAND stained gray, 20% CLAY, trace GRAVEL, slight odor, moist at -11.0', heavy staining and strong odor at -10.0'.	
		Split Spoon				0.7				
		Split Spoon				0.3				
		Split Spoon				0.4				
		Split Spoon				8.6				
-10		Split Spoon				253				
		Split Spoon				470				
		Split Spoon				465				
		Split Spoon				1034				
-15		Shovel								
		Split Spoon				81.7				
-20		Split Spoon				34.7				

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, August 11, 2008 10:14 AM
To: 'Lackey, Johnny'
Cc: Price, Wayne, EMNRD; Resinger, Jim; Moore, Darrell; Monzeglio, Hope, NMENV; Gum, Tim, EMNRD; Bratcher, Mike, EMNRD; Macquesten, Gail, EMNRD
Subject: RE: ALTERNATE PROPOSAL LETTER
Attachments: Liner Authority Letter 5-20-08.pdf

Mr. Lackey:

The OCD has now discussed or addressed all aspects of the attached May 20, 2008 letter (letter) from Mr. James Resinger of the Navajo Refining Company, LLC. (Navajo).

More recently, related to Option 1 of the letter where the OCD attended the presentation meeting (meeting) by Praxair in Santa Fe on August 7, 2008, and approved the leak detection method on a one-time basis only to see if the technology is feasible in theory and application. If the technology and overall process is found to be effective, a simple e-mail request for permission to use the alternative technology should be sufficient. If at some point, Navajo would like the method permanently specified in the discharge permit, the OCD would consider the request. In addition, the OCD followed up in an e-mail dated August 8, 2008, on the agenda items from the meeting to mention that Navajo will need to propose a frequency for Praxair's leak detection method as it applies to tanks. For the purpose of satisfying the discharge permit condition for submittal of a tank testing schedule, Navajo may list the technology or method; however, the OCD will need to review the report from any alternative method and determine whether the method will be feasible in the future. In addition, and for example, Navajo will need to specify the frequency of the testing. Based on the meeting, it seems feasible to implement the technology on all tanks within a five-year period? Navajo will need to determine whether it wishes to test only 20% of the tanks per year or whether a one-time test before the end of the expiration date of the discharge permit is more feasible? In addition, Navajo may propose a schedule beyond the expiration date of the discharge permit as has been discussed between Navajo and the OCD.

Option 1B of the letter is also plausible to the OCD and the 10 year API test would continue to apply. If the tanks are retrofitted, Navajo may wish to prioritize tanks containing BTEX, etc.

Option 2 of the letter is required regardless of the OCD's DP provision and could be used to coincide with the OCD's 5 year permit period. For example, the spreadsheet submittal will have dates for the API inspection and Navajo may want to chronologically display tanks that are coming up for an API inspection within the next 5 years.

Option 3 of the letter where Navajo has installed Electronic Tank Level Indicators, the OCD commends Navajo for its pollution prevention measures and O& M inspection of the tanks.

Regarding the OCD's authority, the OCD recently issued a letter from Ms. Gail Macquesten (OCD Attorney) to Mr. Resinger that is the OCD's position on our authority for some of the items in the discharge permit. Navajo will need to consider its options based on the OCD letter.

Please contact me if you have questions. 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) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/oed/index.htm>

8/11/2008

(Pollution Prevention Guidance is under "Publications")

From: Lackey, Johnny [mailto:Johnny.Lackey@hollycorp.com]
Sent: Friday, August 08, 2008 1:05 PM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Resinger, Jim; Moore, Darrell
Subject: ALTERNATE PROPOSAL LETTER

Carl, attached is the letter we discussed yesterday regarding Navajo's request for an alternative to tank liners. We appreciate the opportunity given to Praxair to present the leak detection technology for consideration.

Thanks,

Johnny Lackey
Environmental Manager
Navajo Refining Company, L.L.C.
Office - 575-746-5490
Cell - 972-261-8075
Fax - 575-746-5451
Johnny.Lackey@hollycorp.com

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8/11/2008



REFINING COMPANY, LLC

FAX

(575) 746-5283 DIV. ORDERS
(575) 746-5481 TRUCKING
(575) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (575) 748-3311

FAX

(575) 746-5419 ACCOUNTING
(575) 746-5451 ENV/PURCH/MKTG
(575) 746-5421 ENGINEERING

May 20, 2008

Wayne Price
Environmental Bureau Chief
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7002 0510 0002 6870 5838

**RE: Alternate Storage Tank Containment Proposal
 Navajo Refining Company, L.L.C.**

Dear Wayne:

This letter is a follow-up to our meeting with Carl Chavez on May 8, 2008 concerning the renewal of Discharge Permits GW-028 for the Artesia Refinery and GW-014 for the Lovington Refinery. During the meeting we discussed OCD's expected inclusion of permit conditions requiring Navajo to install liners under the tanks and throughout the bermed areas at the refineries and to complete the retrofit by the end of the permit term, now expected to be 3 years.

As we discussed, Navajo has serious questions about OCD's authority to require those measures as part of a discharge permit issued under the Water Quality Act and believes that it is appropriately addressing OCD's concerns through the implementation of operational measures. The Water Quality Act, NMSA 1978, §74-6-5 (2005) and the WQCC regulations, 20.6.2 NMAC, only authorize OCD to place reasonable conditions in a discharge permit related to the discharge for which the permit is sought. *See Phelps Dodge Tyrone v. New Mexico Water Quality Control Commission*, 2006-NMCA-115, 140 N.M. 464, 470, 143 P3d 502, 509. Navajo is unaware of any authority to the contrary and requests that you advise us on the legal and technical bases for the condition.

Based on our review, Navajo believes the proposed conditions to be unreasonable. Navajo expects that the conditions will require an expenditure in excess of 25 Million dollars to install the required liners, plus the loss of revenue during the facility down time to retrofit the tanks and berms. The risks associated with potential releases from the tanks do not justify the enormous expenses associated with the installation of liners under the tanks and throughout the bermed areas.

Moreover, Navajo believes that it is unreasonable to complete the retrofit within the next 3 years. While the OCD could issue the permit for a term of 5 years, 20.6.2.3109.H NMAC, even that term is insufficient for Navajo to complete the required retrofits.

During our recent meetings, you stated that the OCD would consider alternatives to a proposed requirement that Navajo Refining Company line the areas underneath our existing product storage tanks and the "bermed" areas surrounding the tanks at the Artesia and Lovington refinery sites. As an alternative to the installation of liners, Navajo proposes that the following measures should be included as options in any OCD order.

1.A. Installation of Leak Detection and Use of Tracer Testing—Navajo has contacted Praxair Services, Inc. to provide a proposal for the installation of leak detection probes underneath each

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tank at Artesia and Lovington. Praxair's process utilizes a proprietary "tracer" that is injected into the product stored within each tank. Within 24 hours, the probes are sampled and analyzed using gas chromatography, which will detect the "tracer" if a leak exists. This approach is currently being used in various refineries and refined product terminals. Praxair has agreed to present this approach in more detail to the OCD in Santa Fe at your request. If a leak is detected, Navajo will promptly remove the tank from service, clean, inspect and repair according to API 653 standards. If approved by the OCD, Navajo would retrofit all tanks at the Artesia and Lovington Refineries over a period of at least 10 years. As tanks are retrofitted, initial testing would be conducted and then tested at a rate of 20% of the tanks each year for 5 years. We would prioritize the installation to begin the installation on the higher priority tanks, as OCD has suggested.

-- or --

1.B Another alternative would be to retrofit each tank by constructing a double bottom in each tank with leak detection "tell-tales" inserted between the floors and spaced around each tank. This would involve taking the tank out of service, isolating and cleaning for entry, then welding in the new floor on top of the existing floor with a space between the floors. Each tank would then have to be filled with fresh water for hydrotesting, and then discharged to ground upon approval from the OCD. If approved, Navajo would retrofit all tanks at the Artesia and Lovington Refineries over a period of at least 10 years. These improvements would be done during our API 653 inspections described in Item 2.

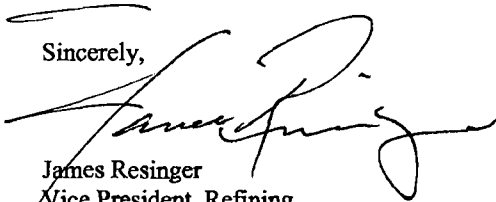
2. API 653 Inspections--Navajo currently conducts API 653 inspections on its tanks at the recommended 10-year intervals. The tank is emptied, isolated, entered and cleaned to conduct a complete internal inspection by certified inspectors. Navajo proposes to continue to conduct API 653 inspections on our tanks at 10 year intervals. Any problems discovered during those inspections will be addressed promptly.

3. Electronic Tank Level Indicators--Navajo has recently installed electronic tank level indication, complete with High and High High level alarms, on all the storage tanks. Signals from these indicators are sent to a control room and are monitored on a 24 hour 7 day a week basis. Through computer monitoring, an audible alarm immediately brings the high level to the operator's attention, identifying the exact location of the problem. This allows the operator to take immediate action to prevent an overflow condition. In addition, every tank level is physically checked and compared with the electronic level device on a weekly basis to ensure its accuracy. Any noted deviation results in the electronic level device being fully calibrated. Navajo responds rapidly to overflow situations and measures are taken to remove any free liquid and remediate contaminated soil before groundwater can be impacted.

Navajo feels that with the installation of the Praxair Leak Detection Technology, or installing double floors within the tanks, the tank inspection program and the steps taken to minimize overflow situations we will have systems in place to quickly identify leaks and greatly reduce the impact of leaks to ground water at these locations.

Please contact me at 575-746-5497 if you have questions or wish to discuss.

Sincerely,



James Resinger
Vice President, Refining

Electronic cc: Navajo: DGM, JEL
Holly: Gary Fuller, David Jelmini, Dave Lamp

cc: Carl Chaves
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St Francis Dr., Santa Fe, NM 87505

Environmental File: environmental\$ on 'nmartnas02' (M:) Artesia Discharge Permits –
OCD Alternate Proposal Discharge Permit (4) - Clean

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 07, 2008 5:03 PM
To: 'Moore, Darrell'
Cc: 'Lackey, Johnny'; Resinger, Jim; Price, Wayne, EMNRD; Gum, Tim, EMNRD
Subject: Navajo Refining Company Thursday, August 7, 2008 Praxair Technologies & Other Refinery Issues Meeting Summary

Darrell, et. al:

Thanks for setting up the Praxair presentation today and for the opportunity to communicate in a meeting about the Navajo Refineries.

Summary of requested items from the OCD based on the meeting:

- 1) WDWs: Congrats you passed the MITs (dynamic) conducted on Tuesday morning. Submit monthly monitoring reports for pressure limit devices (PLDs) for each WDW. Update OCD on cause for fluid loss in the PLD at WDW# 3. Continue to track the levels closely until we can determine the cause.
- 2) Test Plan for annual Fall-Off Test for WDWs # 1, 2 & 3 is requested by November 15, 2008. Navajo will check with Subsurface to see if this date is ok. The OCD informed Navajo that the provisions for the Test Plan may be viewed online at <http://www.emnrd.state.nm.us/ocd/documents/UICGuidance.pdf>. Navajo will need to follow suggested moving the date of the next Fall-Off test to May 2009.
- 3) Not discussed during the meeting, but of equal importance: when is Navajo going to conduct the hydrostatic test on the effluent line to the WDWs? Were you going to propose the Ultra-sonic Long Wave Technology combined w/ CScan?

Summary of requested items from OCD on Navajo Refining Company agenda items:

- 1) Praxair leak detection technology as alternative to liners for tanks and bermed areas within the refinery? Navajo will want to perform its due diligence of the technology to ensure that it will meet the OCD requirement(s). A listing of tanks w/ denotations of the tank test methods w/ dates will need to be submitted within 3 months of discharge permit issuance. Based on the meeting, the OCD may approve. Navajo will need to propose a frequency of testing to the OCD, i.e., all tanks tested before the expiration date of the permit; or 20% of tanks each year for 5 years, etc. I will search the OCD file for the May 20, 2008 letter mentioned by Johnny Lackey apparently requesting approval to use the Praxair method(s). It is important to note that while the OCD may approve the procedure, if the technology proves to be ineffective on a trial basis, Navajo will need to keep its options open for new or other technologies that may prove more effective than standard hydrostatic testing.
- 2) Discuss Praxair's leak detection technology for underground piping. Is this approved by OCD as an alternative to hydrotesting? Yes, on a case-by-case approval process only. Navajo will need to propose the frequency of testing, i.e., Navajo may be able to test all lines at one time before the end of the expiration date on the permit; or every 5 years; or 20% of the piping annually each year.
- 3) Clarify 24 month approval process for the sanitary effluent to the waste water treatment plant. Submit proposed language for discharge permit that may address concerns of Navajo and OCD by Tuesday, 8/12/2008. I want to finalize the discharge permit for the Navajo Artesia Refinery next week.
- 4) Discuss API Separator use issue. OCD language in discharge permit related to this subject appears to be ok, but propose suggested language if Navajo would still like to request a change and OCD will consider. The OCD is considering the API Separator currently being used as a decanting tank for the FCC scrubber reject water as a below grade tank that requires secondary containment. The OCD may require an "Other Requirement" item in the final discharge permit, but will consider Navajo's opinion on this. Submit opinion or suggested language for discharge permit by Tuesday, August 12, 2008.

8/11/2008

Let OCD know if this does not accurately reflect items discussed and please note that there was a new topic item on the effluent line above. Please contact me if you have questions. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, August 06, 2008 11:53 AM
To: 'Lackey, Johnny'
Cc: Resinger, Jim; Moore, Darrell; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV
Subject: RE: OCD MEETING AGENDA

Johnny, et. al:

Thanks for the agenda. We might want to do lunch together if the presentation takes longer than expected or runs into the lunch hour?

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Oil Conservation Division, Environmental Bureau
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Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

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Sent: Wednesday, August 06, 2008 11:13 AM
To: Chavez, Carl J, EMNRD
Cc: Resinger, Jim; Moore, Darrell
Subject: OCD MEETING AGENDA

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8/11/2008

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Praxair Mtg - OCD

8/7/2008

<u>Name</u>	<u>Company</u>	<u>ph#</u>
Bob Krakow	Western Refining	505-632-4135
Dow Riley	" "	505 863-0932
Tim RESINGER	NAVAJO	575 746 5447
Kevin Burton	Praxair Service	281-685-7746
Edward J. Hansen	OCD	505-476-3489
WYATT PRIZZ	OCD	" " 3970
Doug Wilson	Praxair	281 478-1901
Carl Chavez	OCD	505-476-3491
Jim Griswold	OCD	476-3465
Randy Gelling	Praxair	520 990-8961
Darrell Moore	Navajo Refining	575-746-5281
Dave Cobrain	NMED	505-476-6055
Hope Monzeglio	NMED	505-476-6045
Johnny Cackey	NAVAJO Refining	575-746-5490

Chavez, Carl J, EMNRD

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To: Chavez, Carl J, EMNRD
Cc: Resinger, Jim; Moore, Darrell
Subject: FW: Praxair Services - QA/QC Request
Attachments: AST method statement.doc; Sample Report for OCD.doc; 70' AST Map - Probe Radius 20'.pdf

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Sent: Monday, August 04, 2008 1:51 PM
To: Lackey, Johnny
Subject: Praxair Services - QA/QC Request

Johnny,

Attached are three documents:

- 1) QA/QC document
- 2) Sample Report
- 3) 70-foot AST Leak Detection Diagram (70-feet is simply and arbitrary tank diameter)

Please forward to Mr. Chavez at OCD. Look forward to seeing you in Santa Fe this Thursday!

Doug Wilson
Praxair Services, Inc.
Houston, TX
281 478-1901 office
281 478-1925 fax

8/6/2008

281 216-3929 cell

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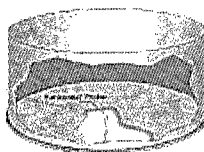
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Praxair Services, Inc.

TRACERTIGHT® INSTALL & TESTING
Above Ground Storage Tanks
(ASTs)



METHOD STATEMENT & RISK ASSESMENT

Prepared by:

PRAXAIR SERVICES, Inc.
3755 N Business Center Dr
Tucson, AZ 85705

Telephone: (520) 888-8400
Facsimile: (520) 293-1306

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APPENDICES

APPENDIX A: Diagram illustrating AST Probe Array.

APPENDIX B: Example Test Report

APPENDIX C: Sample Tailgate Safety Meeting Form

1.0 METHOD STATEMENT

1.1 Praxair Services, Inc.

Praxair Services, Inc. is a wholly owned subsidiary of Praxair providing services to the chemical, refinery and transportation industries. The Asset Integrity Management Services (AIMS) group provides leak detection, corrosion control and pipe inspection services.

1.2 Personnel

Praxair Services uses licensed and certified personnel whenever required. Test technicians are trained and certified in the Tracer Tight method. All field personnel have completed Occupational Safety and Health Administration 40-hour Hazardous Materials Training.

1.3 Test Concept

Tracer Tight® leak testing is performed by mixing a volatile chemical concentrate, a tracer, with the product inside a tank or piping system. The tracer is selected for its compatibility with the product in the tank and piping system and its performance characteristics in each specific test environment. The tracer chemical is added to the product in very low concentrations, typically less than 1 part per million (ppm). The tracer has no impact on the physical properties of the product and works with all types of liquids. The tracers are non-corrosive, inert compounds.

The tracer chemical is distributed throughout the tank and piping system by the motion of the product and vapors. The tracer is partitioned between the vapor space and the liquid product. If the product from the tank or pipeline escapes into the soil, the tracer then evaporates out of the product and disperses into the surrounding soil by molecular diffusion.

After the tracer has had time to diffuse and migrate through the soil away from the leak, soil gas samples are collected from a leak detection probe system that is installed under the tank floor and along piping runs. The system is tested by analyzing these samples with a gas chromatograph for the presence of tracer. The detection of tracer in the soil vapor samples is then used as the sole criteria for determining if there is an active leak.

1.4 Probe System Design & Installation

The *TracerTight*® Test utilizes a probe system designed for each tank based on the area of the tank floor. Each probe is effective over a pre-established area. The design determines optimal placement of each probe so that each area of the tank floor is effectively tested by at least one probe

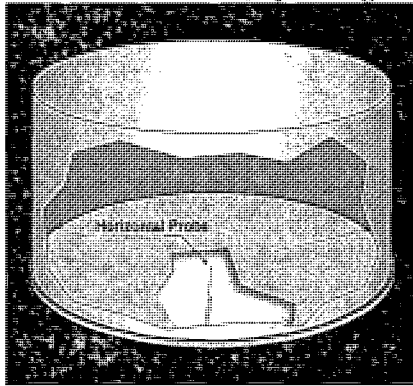
Installation procedures are outlined below:

Tank area is inspected and all utilities and tank design features are taken into account. The leak detection system design is reviewed to ensure that all tank features are considered.

Piping is prepared by cutting, threading and drilling holes in each end section.

Each probe location is checked and cleared to allow access to the soil below the tank floor and proper space allowing probe steel to slide beneath the tank floor without damaging tank floors or liners. In some cases,

where a deep ring-wall exists, a rock drill is used to create neat holes in the concrete for probes to pass through. If the tank floor sits directly on the ground, very shallow trenches need to be dug.



Probes are constructed to meet design specification for length and screening.

Sections of pipe are assembled and inspected for faults.

Probe assemblies and equipment are set up for installation and measurements are taken to ensure proper alignment under the tank.

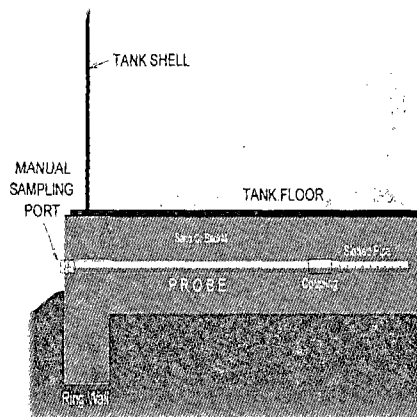
Probes are installed by pounding them horizontally to the desired position beneath the tank floor. Hand pounding equipment designed by Praxair and/or a pneumatic Pierce Airrow is used to hammer probes into the soil beneath the tank floor.

Once installed, each probe is tested for any obstruction interfering with the flow of air required for testing.

Vacuum measurements are taken to determine soil permeability and to help identify the need for any system design modifications.

Once each probe has been inspected and approved, a 90 degree elbow (or other attachment as needed) is attached to the outside end followed by a vertical extension to ground level where a termination cap is fixed. This cap will be later replaced by a TracerTight® Termination cap that is designed for easy access sampling and can be resealed for future testing.

All probes are finished flush with the surrounding grade. All excavations are back-filled and area is returned to pre-installation condition.



Once properly installed, the Tracer Tight® Leak Detection System can be used for repeated future testing with minimal service and repair.

1.5 Leak Simulation Procedures

A leak of known size, typically a few gallons, is simulated at the start of each test. A small amount of a tracer is injected below the tank at a midpoint between sampling probes. The leak simulation tracer is a chemical that is similar to but distinguishable from the tracer added to the tank. Detection of this tracer verifies that the transport of tracers through the soil below the tank is adequate for the detection of a leak.

1.6 Inoculation Procedures

Inoculation is the introduction of the *TracerTight*[®] compound into the product of the Tank to be tested. This compound (Tracer) is added to the product to achieve the target concentration (typically less than one part per million). This small concentration is enough to allow proper testing of the system. Tracer is injected into the system using the following procedures.

Each tank is inspected for areas of concern. Leakage from valves and connections that may transport tracer to the ground are repaired or isolated before inoculation can proceed.

The tank volume and product level are used to determine the amount of tracer needed. The tracer compound is placed in a pressurized container and is then released into the product.

Tracer may be injected into the receipt line while product is being added to the tank, through a gauging hatch or through some other access point such as a low point drain or sampling port.

1.7 Sampling Procedures

For a tightness test with on-site analysis of the tracer the following samples will be collected.

Background Samples – soil gas samples are collected from the monitoring probe system before inoculation to ascertain the background level of the chemical.

Confirmation Sample – collected to ensure adequate mixing of the Tracer – Product inside the tank.

24-Hour Samples - soil gas samples will be collected from the monitoring probe system 24hrs after confirmation of product / Tracer mixing.

48-Hour Samples - soil gas samples will be collected from the monitoring probe system 48hrs after confirmation of product / Tracer mixing.

For periodic leak detection monitoring, background samples may not be collected. Testing samples may be collected up to 30 days after the inoculation of the system.

Sampling Process - The aboveground end of the probe will be fitted with a probe adaptor and a length of polyethylene tubing leading to a vacuum pump. To ensure adequate flow of gas into the probe, the flow of gas will be monitored by a vacuum gauge.



The volume of air within the probe will be purged by evacuating 2 to 5 liters of gas. The evacuation time in minutes versus the vacuum in inches of mercury (Hg) will be used to calculate the necessary evacuation time. If soil gas does not flow into the sampling probe, an attempt will be made to clear it. If the probe cannot be cleared it may be retracted and another probe installed. The vacuum will be monitored and recorded for each sample collected.

During the soil gas evacuation, samples will be collected from the evacuation line with a syringe and transferred to designated sample canisters. Subsamples of the soil gas sample will be injected into the GC in volumes ranging from 1 microliter (μL) to 2 mL, depending on the concentration at that particular location.

1.8 Analytical Procedures

The samples are analyzed using a gas chromatograph, equipped with an electron capture detector (ECD) and flame ionization detector (FID). Compounds will be separated in the GC on packed analytical columns in a temperature controlled oven. Nitrogen will be used as the carrier gas. The mobile analytical laboratory also is equipped with Hydrogen and Air cylinders to supply the FID to detect hydrocarbon in the soil gas samples.

1.9 Quality Control

Praxair has incorporated stringent quality assurance and quality control into its Tracer Tight® Leak Detection Method. Trained personnel, equipment calibration checks, background system checks and the leak simulation are designed to eliminate any false detection and ensure a valid test each time.

1.10 Criteria For Determination of Leakage

Determination of leakage is based on the presence or absence of tracer. In principal, any tracer detected indicates a leak. In practice, the act of bringing Tracer to the site creates the potential for the detection of extremely low background levels. Samples are collected from the ambient air around the tanks and from the probes under the tanks before and during the testing. Therefore, the indication of leakage is based on two criteria: the detection of tracer higher than levels present in background samples, and an increase in tracer concentration over time.

APPENDIX A: Diagram Illustrating AST Probe Array

APPENDIX C: Tailgate Safety Form (example)



3755 N. Business Center Drive
Tucson, Arizona 85705
Toll Free (800) 989-9929
Tel: (520) 888-9400
Fax: (520) 293-1306

Tracer Tight® Leak Test

March 2008 Testing

Three Aboveground Storage Tanks
Terminal
City, ST

Praxair Job No. 10000000

Prepared for:

Client
1111 Business Street
City, ST 11111

Tel: 512-555-1111

Attention: First Last Name

Submitted by:

Praxair Services, Inc.
Project Manager

E-Mail: **Todd_Waltz @ Praxair.com**
Website: <http://www.praxair.com/services>

UCISCO.

Industrial Gas Services
Pipeline Services
Mechanical Cleaning Services

Tracer Research.

Leak Detection Services
Environmental Sampling Services

Corrocon.

Cathodic Protection Services
Environmental Directional Drilling

Site Location: **Terminal**

Praxair Job No.: **111xxx111**

Inoculation and Sampling Information:

	Inoculation:	Sampling:
Start Date:	Month 6, 2008	Month 6, 2008
Completion Date:	Month 13, 2008	Month 13, 2008
	Job Completion Date:	Month 13, 2008

Testing Results:

Facility:	System:	Type:	Diameter:	Product:	Tracer:	Result:	
BP	Tank 1	AST	50 ft	Diesel	A	Passed	
BP	Tank 3	AST	50 ft	Diesel	A	Passed	
BP	Tank 7	AST	65 ft	Unleaded Gasoline	A	Passed	

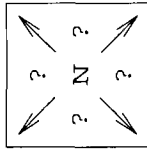
- Project Manager
Date: MO/26/2008

Praxair Services, Inc. hereby certifies that the above listed systems(s) have been tested by means of Tracer Tight®, which has been evaluated by a third party according to protocols issued and approved by the United States Environmental Protection Agency (EPA) as being able to detect a leak at a rate of 0.05 gallons per hour with a Probability of Detection (PD) of 0.97 and a Probability of False Alarm (PFA) of 0.029. Tracer concentrations are report in micrograms per liter (ug/L). The Tracer Tight® non-volume metric test and does not report in gallons per hour. If you have any questions or concerns, please call Praxair Services, Inc. at 800-989-9929 ext.234.



Praxair Services, Inc.

☐ Air Blank
(Up Wind)

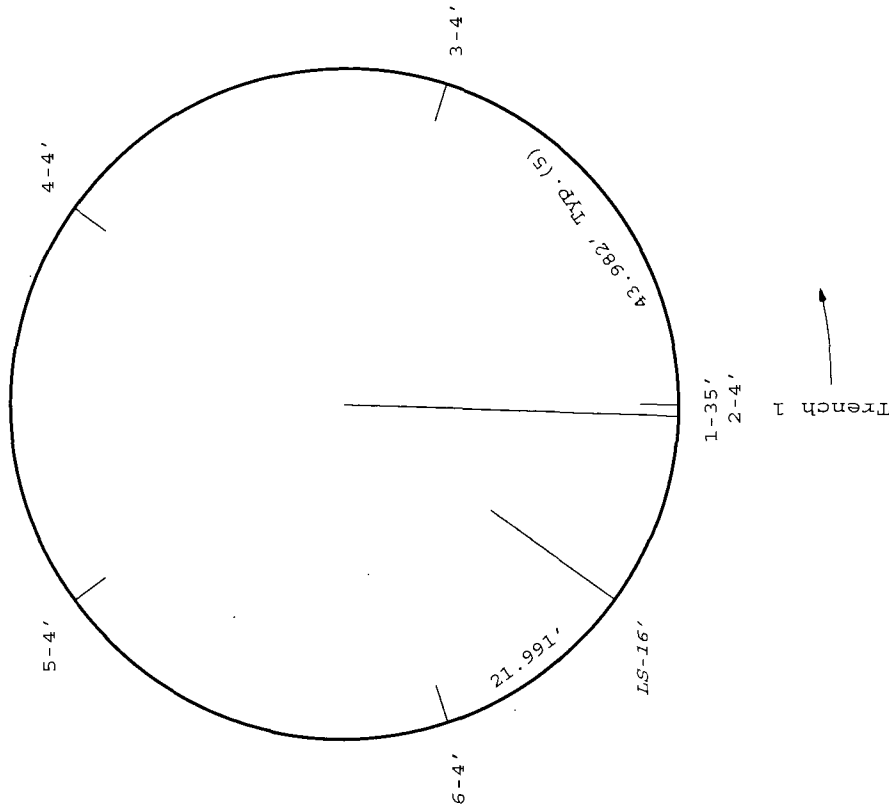


EXPLANATION

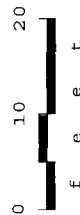
1-35' Probe Number and Depth

Probe Location

LS-16' Leak Simulation Probe



Probe Dimension Chart	
1	Probe at 35.0 ft.
5	Probes at 4.0 ft.
6	Total Probes
55.00	Total Length
219.91	ft. Circumference
5	Trenches
Note: All Trench Distances Measured On The Arc	



TRC Job#

70 ft. Diameter AST

Circumference: 219.9 feet

Probe Radius: 20.0 feet

Standard Radial Probe Placement

SAMPLING LOCATIONS

70' Dia.
20' P.R.

☐ Air Blank

(Down Wind)

File: AST-070 Size: A

Arc: AST-PR20 Date: 07-21-08

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, August 01, 2008 9:29 AM
To: 'Schmaltz, Randy'; Hurtado, Cindy; 'Riege, Ed'
Cc: Price, Wayne, EMNRD; 'Moore, Darrell'; 'Lackey, Johnny'; Monzeglio, Hope, NMENV
Subject: FW: OCD/Praxair Mtg

Randy, Ed and Cindy:

I am writing to invite some representatives (i.e., engineers, scientists...) to an upcoming presentation by Praxair on alternative methods for tank testing that the Navajo Refinery is interested in implementing at its refineries to address OCD required tank testing and alternative approvals on testing. I believe Western Refining SW faces similar challenges at its refineries and the OCD is willing to consider feasible alternative technologies for addressing its requirements. Please come and join Navajo Refining and the OCD at the upcoming presentation here at the Wendell Chino Building (OCD 3rd Floor Conference Room). 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) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/oed/index.htm>
 (Pollution Prevention Guidance is under "Publications")

From: Lackey, Johnny [mailto:Johnny.Lackey@hollycorp.com]
Sent: Tuesday, July 15, 2008 12:23 PM
To: Resinger, Jim; Moore, Darrell; Douglas_Wilson@Praxair.com; Chavez, Carl J, EMNRD
Subject: OCD/Praxair Mtg

When: Thursday, August 07, 2008 10:00 AM-12:00 PM (GMT-07:00) Mountain Time (US & Canada).
 Where: Santa Fe

~~*~*~*~*~*~*~*

Meet with the New Mexico OCD to present Praxair's leak detection technology for Above Ground Storage Tanks.

This inbound email has been scanned by the MessageLabs Email Security System.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, July 09, 2008 4:49 PM
To: 'Lackey, Johnny'; Price, Wayne, EMNRD
Cc: Resinger, Jim; Fuller, Gary; Jelmini, David; Moore, Darrell; Macquesten, Gail, EMNRD
Subject: RE: NAVAJO DRAFT DISCHARGE PERMIT (GW-028)

Mr. Lackey, et. al:

Responses to your comments/requests are provided below in red text.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Lackey, Johnny [mailto:Johnny.Lackey@hollycorp.com]
Sent: Wednesday, July 09, 2008 4:13 PM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Resinger, Jim; Fuller, Gary; Jelmini, David; Moore, Darrell
Subject: NAVAJO DRAFT DISCHARGE PERMIT (GW-028)
Importance: High

Carl,

Thanks for giving us additional time to review and comment on the Navajo Refining Company - Artesia Refinery Draft Discharge Permit (GW-028).

After careful review of the draft we ask that you consider the following comments/requests:

- On page 2, condition 2, **Permit Expiration and Renewal and Penalties**. "The permit will expire on October 21, 2011." This only gives us 3 years to comply with certain conditions required in the proposed permit instead of 5 years that the permit should be valid for. This issue was identified in a letter from Jim Resinger to Wayne Price and cc'd to you dated May 20, 2008. We ask that the permit be changed to expire on October 21, 2013. No. We must stick with the original permit expiration date. Navajo has informed OCD that it will be seeking to submit a schedule within 3 mo. of permit issuance with dates that extend beyond the permit expiration date for consideration and approval.
- On page 4, condition 9, **Above Ground Tanks**. We would like to schedule a meeting at OCD's convenience with Praxair Technology to present an alternate proposal to retrofitting existing tanks with impermeable liners under the tanks and bermed areas. Ok. Propose a date and time in Santa Fe (preferred). The permit includes language for OCD approvals of alternative methods, etc.
- On page 6, condition 13 A, **Underground Process/Wastewater Lines**. We strongly suggest that OCD **remove** the reference to "above ground process/wastewater pipelines" in the first and second sentences of this condition. Navajo currently follows Industry Standard, API 570 for mechanical integrity and testing of all **above ground** process/wastewater pipelines, which includes UT testing and visual inspection on 5 to 10 year frequencies depending on class of service the pipe is in. Ok.
- On page 7, condition 17 iii, **OCD Inspections**. Navajo challenges the requirement to report "All explosions,

7/10/2008

fires, etc., under OCD Rule 116. This reference in Rule 116 is found under the section that pertains to drilling activity and not refining. Navajo currently has to report these activities to other regulatory agencies as required by the EPA Risk Management Plan requirements and feels this reporting requirement to OCD is redundant and unnecessary. This will ultimately be settled by compliance & enforcement if and when the OCD identifies a violation of this stipulation of the permit. This issue will resolve itself at a point in time in the future.

- On page 7, condition 17 iv, **OCD Inspections**. Navajo requests that we be allowed 24 months versus 12 months to implement the sanitary effluent waste water project which will transfer sanitary effluent from various points within the refinery to the waste water treatment plant to be recycled with our treated waste water for plant use and injection to disposal wells after treatment. We may be required to construct several buildings within the refinery to meet OSHA siting requirements and relocate our two control rooms. These buildings will have to be tied into the plant oily water drain for treatment and it will require up to 18 months before construction of the buildings are complete and the control rooms are relocated. Upon completion of these tasks the new facilities will be tied into the oily water drain system and the existing facilities will be abandoned. It will take up to 24 months to accomplish this. Ok. 24 months instead of 12 months, but we want a bonified proposal with drawings (PE Certified) within 3 months to assess the feasibility of Navajo's plans and approve/disapprove depending on the quality and feasibility of the project.
- On page 11, condition 21 A, **Additional Site Specific Conditions**. Navajo requests that OCD change sentence one to read " **API Separators**: The owner/operator shall notify the OCD of any inactive separators that are placed back into **oily water separator** service". Maybe. OCD will grapple with the nuance of the addition of "oily water separator" as using an API Separator for any reason may need to be approved by OCD. What other uses could inactive API Separators serve that Navajo would want to add such language?

Your serious consideration of the above comments/requests is appreciated. Thank you.

Johnny Lackey
Environmental Manager
Navajo Refining Company, L.L.C.
Office - 575-746-5490
Cell - 972-261-8075
Fax - 575-746-5451
Johnny.Lackey@hollycorp.com

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This inbound email has been scanned by the MessageLabs Email Security System.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, May 21, 2008 3:58 PM
To: Wells, John, NMENV
Cc: Price, Wayne, EMNRD; 'Moore, Darrell'; Monzeglio, Hope, NMENV
Subject: Navajo Refinery Company, LLC Artesia Refinery (GW-28) & May 16, 2008 Waste Water Treatment/Sanitary Effluent Recycle Project Letter (letter)

Mr. Wells:

Good afternoon. The NM Oil Conservation Division (OCD) met with Navajo Refinery Personnel on May 8, 2008, to discuss the renewal of their discharge permit and resolution of their Class V Provision of the OCD Discharge Permit. There was discussion about NMED concerns about the existing sanitary system at the refinery and there have been some recent City of Artesia sanitary sewer line changes adjacent to the refinery.

The Navajo Refinery would like to submit a work plan and project schedule for implementing an upgrade to its waste water treatment plant as specified in Mr. Jim Resinger's (Navajo) letter of May 16, 2008 (you were copied in the letter). Mr. Resinger has indicated that the upgrade could be completed within the next 24 months and would address NMED and OCD concerns associated with its sanitary sewer system(s).

The OCD would like to set target dates for completion of the upgrade into the OCD discharge permit. Consequently, I am writing to communicate with the NMED and determine whether this upgrade would address the NMED's current concerns? Similar to another refinery in Gallup, NM where the OCD required the company to complete a pilot study for the best handling and treatment of its sanitary effluent at the refinery, we are making great progress on upgrades that will prevent pollution while conserving water and saving the company money.

I would appreciate a response from NMED related to Mr. Resinger's letter as I am working to complete the discharge permit for the Navajo Artesia Refinery by the end of May 2008, which will require public notice, etc. and posting of the discharge permit on the OCD Website. This is an opportune time for the agencies (OCD and NMED) to move forward and allow the refinery to implement a solution to existing sanitary issues. I look forward to hearing from you.

Please contact me to discuss. Thanks for your cooperation in this matter.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

5/21/2008



REFINING COMPANY, LLC

FA 2008 MAY 21 PM 2 47

(575) 746-5283 DIV. ORDERS
(575) 746-5481 TRUCKING
(575) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (575) 748-3311

FAX

(575) 746-5419 ACCOUNTING
(575) 746-5451 ENV/PURCH/MKTG
(575) 746-5421 ENGINEERING

May 16, 2008

Wayne Price
Environmental Bureau Chief
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt

7002 0510 0002 6870 5821

**RE: Waste Water Treatment/Sanitary Effluent Recycle Project
Navajo Refining Company, L.L.C.**

Dear Wayne:

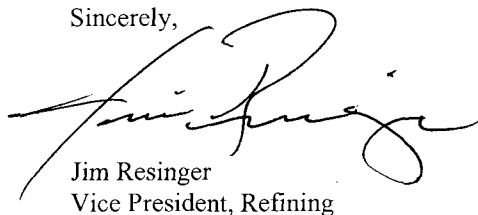
As we discussed in our May 8th meeting, Navajo is currently evaluating a capital project to upgrade our waste water treatment plant by installing Ultrafiltration, a second Reverse Osmosis (RO) Unit, clarifier and diverting the refinery sanitary effluent to Navajo's waste water treatment plant for biological treatment and recycling.

This project will allow Navajo to recycle over 60 % of the water currently being pumped to injection wells, which without this upgrade has no further beneficial use to Navajo or the city of Artesia. The recycled portion of the treated water will be used as make-up water for the refineries' cooling towers. The improved water quality used as cooling tower make-up increases the cycles in the cooling towers thereby further reducing the amount of well water and City water required for make-up. By recycling the treated water; we will reduce the amount of water currently coming from Navajo's wells and the city of Artesia's water system into the refinery. This system will also eliminate the sanitary waste storage tanks currently in use within the refinery and the need to transport this waste to the city of Artesia's POTW.

All piping and equipment for the proposed upgrade will be installed above ground. The underground sewer lines will continue to be pressure tested as specified in our discharge permit. Although we are early in our project planning we feel the project should be on stream within 24 months. Let me know if OCD has any questions or comments.

Please contact me at 575-746-5497 if you have questions or wish to discuss.

Sincerely,



Jim Resinger
Vice President, Refining

cc: D. Moore
D. Jelmini
J. Lackey
G. Fuller
Carl Chavez, Oil Conservation Division, 1220 South St Francis Dr., Santa Fe, NM 87505
Bill Olsen, NMED, Groundwater Bureau Chief, Harold Runnels Bldg. Room N2250, 1190 St Francis Dr.,
Santa Fe, NM 87502
John Wells, NMED, Ground Water, Liquid Waste, 1914 West 2nd, Roswell, NM 88202
Hope Monzeglio, NMED, Hazardous Waste Bureau, 2905 Rodeo Park Dr. East, Santa Fe, NM 87505



SAULSBURY ENGINEERING & CONSTRUCTION

5308 Andrews Highway • Odessa, Texas 79762 • Phone (432) 366-4252 • Fax (432) 366-6952

April 17, 2008

Navajo Refining Company
501 E Main St.
Artesia, NM 88210

Attn: Bill Romine

Re: Tank ring wall inspection

Mr. Romine,

Saulsbury Engineering & Construction appreciates the opportunity to consult with NRC on this matter.

Areas along the outer perimeter of T-801 and T-815 foundations have separated due to the weight of the tanks. Due to the nature of concrete in tension, the concrete outside the rebar has transposed and in some cases fallen from the foundation. Attached are pictures of the two tank foundations.

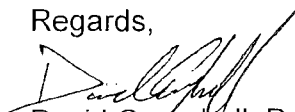
This is due to the fabrication of tank floors that use overlapping plates of steel. The bottom plate has a concentrated load at the plate edge. As this is typical of this type of fabrication, the distribution of the load outside the rebar cage of the ring wall foundation is what is causing the foundation damage.

Structurally, the foundations are still acceptable.

For future ring wall foundations, the location of the tank fabrication should be verified to be inside the rebar cage of the foundation.

Please do not hesitate to call with any questions.

Regards,


David Campbell, P.E.



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, February 29, 2008 8:54 AM
To: 'Moore, Darrell'; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Cc: Lackey, Johnny; Resinger, Jim; Davis, Gary
Subject: RE: Liner under new tanks

Darrell:

Good morning. Thanks for the notice. The OCD is available on Thursday, March 13-14, 2008. Please confirm. Also, during our visit, we would like to view any tanks with concrete rings and liners emplaced as discussed during our meeting.

Before I forget, from our meeting the other day, could you please verify that liner was placed under Tank 815 and provide an as built drawing to the agencies.

By receipt of this e-mail, NMED please provide additional communication, if necessary. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Friday, February 29, 2008 8:22 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Lackey, Johnny; Resinger, Jim; Davis, Gary
Subject: Liner under new tanks

Carl,

I have checked with our engineer who is supervising the construction of the new tanks. The installation of the liner under the crude tank that you wanted to witness is scheduled for the week of March 10, 2008.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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2/29/2008

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2/29/2008

Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Friday, February 29, 2008 8:31 AM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD
Subject: RE: NRC Discharge Plan

Carl

Thanks for getting back to me and with the new language changes. Once I have looked over the information, I will get back to you with any questions.

Thanks
Hope

From: Chavez, Carl J, EMNRD
Sent: Friday, February 29, 2008 8:30 AM
To: Monzeglio, Hope, NMENV
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD
Subject: RE: NRC Discharge Plan

Hope, et. al:

Yes. Wayne explained at the meeting the other day that a tank set on an impermeable pad (pad) or lined pad would be regarded as a tank with primary (tank) and secondary containment (pad) with leak detection because any leakage would be evident over the pad. Item #11 (Housekeeping) provides language, which addresses leak detection. Item #7 deals with labeling tanks for emergencies.

Item #5 (Above Ground Tanks) of the existing permit along with Item #11 (Housekeeping) address the requirement for new tanks to be placed on an impermeable pad within the berm. New language has been developed in the draft permit and is provided below in black text along with a link to OCD tank regulations.

Above Ground Tanks: The owner/operator shall ensure that all aboveground tanks have impermeable secondary containment (*e.g.*, liners and berms), which will contain a volume of at least one-third greater than the total volume of the largest tank, and if interconnected tanks are present, the total volume of all interconnected tanks. The owner/operator shall retrofit all existing secondary containment(s) before this discharge plan permit expires. The owner/operator may propose an alternate plan or schedule to accomplish the above to the Division for approval by ?. Tanks that contain fresh water or fluids that are gases at atmospheric temperature and pressure are exempt from this condition.

Below-Grade Tanks/Sumps and Lagoons/Pits/Ponds.

All below-grade tanks and sumps must be approved by the OCD prior to installation and must incorporate secondary containment with leak detection into design. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal or by August 1, 2011. All existing below-grade tanks and sumps without secondary containment and leak detection must be tested annually or as specified herein. Systems that have secondary containment with leak detection shall have a monthly inspection of the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

2/29/2008

The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds. Where netting is not feasible, routine witnessing and/or discovery of dead wildlife and migratory birds shall be reported to the appropriate wildlife agency with notification to the OCD in order to assess and enact measures to prevent the above from reoccurring.

Housekeeping: The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

OCD Tank Regulations (search for "tank"):

http://www.emnrd.state.nm.us/oed/documents/RULEBOOK07-02-14_001.pdf

Please contact me if you have questions or 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Thursday, February 28, 2008 11:48 AM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD
Subject: NRC Discharge Plan

Carl

Does OCD have requirements for leak detection for newly installed tanks in the discharge plan for Navajo? The only thing I saw pertaining to tanks was #5 "Above Ground Tanks. For the installation of new tanks, are there any other tank requirements by OCD, if so where are they referenced? I am working on Navajo's Permit Modification and want to make sure I include all of OCD's requirements pertaining to above ground tanks.

Thanks
Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 476-6045; Main No.: (505)-476-6000
Fax: (505)-476-6060

2/29/2008

hope.monzeglio@state.nm.us

Websites:

New Mexico Environment Department
Hazardous Waste Bureau



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

February 28, 2008

Mr. Darrell Moore
Environmental Manager for Water & Waste
Navajo Refining Company- Artesia Refinery
PO Box 159
Artesia, New Mexico 88211

**RE: DISCHARGE PERMIT (GW-028) K048 Waste Disposal Resolution
NAVAJO REFINING COMPANY- ARTESIA REFINERY**

Dear Mr. Moore:

The New Mexico Oil Conservation Division (OCD) recently became aware of Artesia Aeration, LLC (Artesia Aeration) surface waste management facility's acceptance and disposal of Dissolved Air Flotation (DAF) waste generated by the Navajo Artesia Refining Company. OCD's initial concerns were the RCRA Waste Classification and Listing (K048) of the DAF waste and disposal of DAF waste at a permitted surface waste management facility restricted to landfarming operations. An OCD investigation included the inspection and review of documents provided by Navajo Artesia Refinery.

During the February 7, 2008 site visit, Mr. Brad Jones, an OCD representative, observed the DAF material placed in a landfarm cell dedicated for waste from Navajo. At the time, Mr. Jones recommended that the DAF material be isolated and a berm be placed around the material until further instructions were provided. Mr. Jones obtained copies of available delivery manifest from the landfarm office and traveled to Artesia Aeration's Hobbs office to inspect and obtain copies of any additional records regarding this matter. According to the available copies obtained during the February 7, 2008 visit and copies provided by Navajo, approximately 15 ten-cubic yards of DAF material were delivered to the Artesia Aeration landfarm – an approximate total of 150- cubic yards of DAF material. Artesia Aeration was unable to produce or provide Mr. Jones a signed C-138 form approving the acceptance of the DAF material.

The OCD wishes to take this opportunity to resolve the DAF disposal issue under the Navajo Refining Company's Discharge Permit (GW-28) Section 13 (Waste Disposal), which states: "All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells, Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge permit will be approved by OCD on a

Mr. Moore
Navajo Refining Company
February 28, 2008
Page 2 of 2

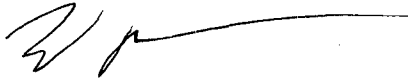
case-by case basis.” OCD attached a copy of the Non-Hazardous Material Flow Diagram to the permit supplied in the discharge plan addendum dated May 31, 2002.

In order to close this complaint, OCD requires the removal of the DAF waste from Artesia Aeration and submittal of a DAF waste removal report within 15 days of receipt of this letter. The report shall include the protocols, procedures and methods implemented and applied to adequately remove the DAF material from the landfarm facility and supporting documentation that demonstrates the proper disposal of the DAF waste.

To ensure and prevent any future issues in regards to this matter, Navajo Refining Company shall submit a DAF waste management plan to the OCD for review and approval within 15 days of receipt of this letter. The waste management plan shall propose protocols, procedures and methods that Navajo Refining Company will implement to ensure proper approval, manifesting, and disposal of DAF waste at an OCD approved facility.

OCD anticipates the submittal of the DAF removal report and waste management plan. Please contact me if you have questions at (505) 476-3490 or wayne.price@state.nm.us. Thank you.

Sincerely,



Wayne Price
Environmental Bureau Chief

LWP/cjc

Cc: OCD District Office

Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Thursday, February 21, 2008 12:52 PM
To: Chavez, Carl J, EMNRD; 'Moore, Darrell'
Subject: RE: New Unit Construction (GW-28)

Correction: OCD considers these modifications to be significant and are major modifications. However, since the DP is up for renewal we can handle these under the renewal process and prevent double billing to the company.

From: Chavez, Carl J, EMNRD
Sent: Tuesday, February 19, 2008 4:16 PM
To: Price, Wayne, EMNRD; 'Moore, Darrell'
Subject: RE: New Unit Construction

Darrell:

We do need the drawings to determine whether the modification(s) is minor or major in scope. Based on Wayne's response, I believe the modifications are minor and will not require any public notice or additional fees. I also told Wayne that Navajo-Artesia Refinery is sending in a comprehensive report on all the changes made since the last discharge plan was issued. We should also see the drawings in the report. 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) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
 (Pollution Prevention Guidance is under "Publications")

From: Price, Wayne, EMNRD
Sent: Tuesday, February 19, 2008 3:51 PM
To: Moore, Darrell
Cc: Chavez, Carl J, EMNRD
Subject: RE: New Unit Construction

Dear Darrell, our only purpose in reviewing the drawings is to help you in making sure you are abiding by the permit conditions. It is not our intent to approve or disapprove any process. So if you feel comfortable in proceeding in the building the units then proceed. Just keep in mind things like curb and pad and secondary containment issues, underground piping designed so they can be pressured tested etc.

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Tuesday, February 19, 2008 3:22 PM
To: Price, Wayne, EMNRD
Subject: RE: New Unit Construction

Wayne

Back in December we sent OCD drawings on 4 new units we are building. This came out of the last inspection. We were told that OCD needed to see drawings of any new construction. Maybe my question is this.....do we need to wait on OCD approval of those drawings? Do you just want the drawings so OCD is up to date on what is

2/21/2008

being built? We are under the impression OCD wants approval of those drawings before construction starts. If THAT'S the case....we are desperately in need of that approval. I don't think there will be any issues with the drawings....we have all sumps secondarily contained...that's standard procedure now. That's what I need help with.

From: Price, Wayne, EMNRD [mailto:wayne.price@state.nm.us]
Sent: Tuesday, February 19, 2008 3:04 PM
To: Moore, Darrell; Chavez, Carl J, EMNRD
Subject: RE: New Unit Construction

Darrell, I have Carl busy on another project, how can I help you?

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Tuesday, February 19, 2008 2:29 PM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Subject: RE: New Unit Construction

Carl

We are desperately waiting to hear something back on this.

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, February 15, 2008 12:36 PM
To: Moore, Darrell; Price, Wayne, EMNRD
Subject: RE: New Unit Construction

Darrell:

I'll respond on Tuesday, February 19, 2008 COB. I apologize for the delay. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Friday, February 15, 2008 11:24 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Subject: RE: New Unit Construction

Carl

On December 12, 2007 we forwarded the below drawings to you to get approval for construction of these units. The next day, December 13, 2007, we forwarded the drawings for the New Sulphur Recovery Unit and the new Rose Unit. We never heard back from you. I would appreciate an e mail regarding this issue. Thanks for your time.

From: Moore, Darrell

2/21/2008

Sent: Wednesday, December 12, 2007 3:48 PM

To: 'Chavez, Carl J, EMNRD'; 'Monzeglio, Hope, NMENV'; 'Price, Wayne, EMNRD'

Cc: Lackey, Johnny; Resinger, Jim; Beardemphl, Scott; Price, Doug; Davis, Gary; Kleihege, Mike; Howes, Randy

Subject: New Unit Construction

Carl,

As per our discharge permit, I am forwarding drawings to you and Hope of two new units that we are going to be starting construction on in the very near future. The attached figures include drawings for a new Mild Hydrocracker (MHC) and a new hydrogen unit. I have also attached a site plan with block diagrams of where the new units will be located within the refinery. We are still finalizing drawings for a new Sulphur Recovery Unit (SRU) and a new Rose Unit. Those two units are noted on the site plan so you can get an idea of where they will be located. The drawings of those two units (SRU and Rose) will be forwarded to you as soon as possible.

We have contractors mobilizing to start preparations to construct these units. Your timely review of this material will be greatly appreciated.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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2/21/2008

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This inbound email has been scanned by the MessageLabs Email Security System.

2/21/2008

Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Tuesday, February 19, 2008 8:10 AM
To: Chavez, Carl J, EMNRD
Cc: 'Moore, Darrell'
Subject: RE: Tk 438 Hydrotest

OCD hereby approves of your request.

Please be advised that OCD approval of this plan does not relieve the owner/operator of responsibility should their operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Chavez, Carl J, EMNRD
Sent: Tuesday, February 19, 2008 8:07 AM
To: Price, Wayne, EMNRD
Cc: Moore, Darrell
Subject: FW: Tk 438 Hydrotest

Mr. Price:

For your review and response to Mr. Moore's request please. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Tuesday, February 19, 2008 7:57 AM
To: Chavez, Carl J, EMNRD
Subject: FW: Tk 438 Hydrotest

We really need an answer here!!

From: Moore, Darrell
Sent: Thursday, February 14, 2008 7:48 AM
To: 'Chavez, Carl J, EMNRD'; 'Price, Wayne, EMNRD'
Subject: FW: Tk 438 Hydrotest

Carl

I haven't heard from you on this.

2/19/2008

From: Moore, Darrell
Sent: Monday, February 11, 2008 10:33 AM
To: 'Chavez, Carl J, EMNRD'
Cc: Lackey, Johnny; Bolding, David
Subject: Tk 438 Hydrotest

Carl

We are running a hydrotest on Tk 438. The analysis of the hydrotest water is attached. As usual with these tests, Iron is above the limit but the tank is made of iron and the water has been in the tank for a little over a week. We have about 50,000 bbls of water that we are asking for approval to put on our farm on the south side of Eagle Draw. As usual with a tank in a refinery, it is critical to get the tank back into operation so your attention to this would be greatly appreciated.

If you have any questions, please call me at 575-746-5281 or on my cell at 575-703-5058.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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2/19/2008



GW-28



February 08, 2008

Jeff Byrd
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (505) 746-5468
Fax: (505) 746-5421

Re: RO Reject Annual

Work Order : 0802026

Dear Jeff Byrd,

e-Lab Analytical, Inc. received 2 samples on 2/2/2008 08:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab Analytical, Inc. 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 e-Lab Analytical, Inc. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 48.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Glenda H. Ramos

Jeffrey L Croston
Project Manager



Certificate No: T104704231-06-TX

e.Lab Analytical, Inc.
Part of the **ALS Laboratory Group**
10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338
Phone: (281) 530-5656 Fax: (281) 530-5887
www.elabi.com www.alsglobal.com
A Campbell Brothers Limited Company

Client: Navajo Refining Company**Project:** RO Reject Annual**Work Order:** 0802026**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
0802026-01	T-438	Water		2/1/2008 15:00	2/2/2008 08:25	<input type="checkbox"/>
0802026-02	Trip Blank	Water		2/1/2008 15:00	2/2/2008 08:25	<input checked="" type="checkbox"/>

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Case Narrative

Batch 28064 Metals MS/MSD was an unrelated sample.

Batch R59565 Volatiles MS/MSD was an unrelated sample.

Batch R59521 Anions MS/MSD was an unrelated sample.

pH (sample T-438) was received outside of the recommended holding time, but was analyzed immediately upon receipt of the laboratory.

e-Lab Analytical, Inc.

Date: February 08, 2008

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Sample ID: T-438

Lab ID: 0802026-01

Collection Date: 2/1/2008 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			SW8081		Prep Date: 2/4/2008	Analyst: JLJ
4,4'-DDD	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
4,4'-DDE	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
4,4'-DDT	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Aldrin	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
alpha-BHC	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
beta-BHC	0.00011	P	0.000050	mg/L	1	2/5/2008 3:48:00 AM
Chlordane	ND		0.00050	mg/L	1	2/5/2008 3:48:00 AM
delta-BHC	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
Dieldrin	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Endosulfan I	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
Endosulfan II	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Endosulfan sulfate	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Endrin	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Endrin aldehyde	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
Endrin ketone	ND		0.00010	mg/L	1	2/5/2008 3:48:00 AM
gamma-BHC	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
Heptachlor	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
Heptachlor epoxide	ND		0.000050	mg/L	1	2/5/2008 3:48:00 AM
Methoxychlor	ND		0.00050	mg/L	1	2/5/2008 3:48:00 AM
Toxaphene	ND		0.00050	mg/L	1	2/5/2008 3:48:00 AM
Surr: Decachlorobiphenyl	83.1		54.9-145	%REC	1	2/5/2008 3:48:00 AM
Surr: Tetrachloro-m-xylene	87.3		51.5-142	%REC	1	2/5/2008 3:48:00 AM
PCBS			SW8082		Prep Date: 2/4/2008	Analyst: JLJ
Aroclor 1016	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1221	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1232	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1242	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1248	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1254	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Aroclor 1260	ND		0.000500	mg/L	1	2/4/2008 4:34:00 PM
Surr: Decachlorobiphenyl	87.6		54-140	%REC	1	2/4/2008 4:34:00 PM
Surr: Tetrachloro-m-xylene	91.8		53-137	%REC	1	2/4/2008 4:34:00 PM
MERCURY, TOTAL - SW 7470A			SW7470		Prep Date: 2/4/2008	Analyst: JCJ
Mercury	ND		0.000200	mg/L	1	2/4/2008 6:06:12 PM
ICP METALS, TOTAL - SW6020A			SW6020		Prep Date: 2/4/2008	Analyst: ALR
Aluminum	0.151		0.0100	mg/L	1	2/5/2008 1:08:00 AM
Arsenic	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Barium	0.0264		0.00500	mg/L	1	2/5/2008 1:08:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 P - Dual Column results percent difference > 40%
 E - Value above quantitation range
 H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: February 08, 2008

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Sample ID: T-438

Lab ID: 0802026-01

Collection Date: 2/1/2008 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Beryllium	ND		0.00200	mg/L	1	2/5/2008 1:08:00 AM
Boron	0.0448		0.0200	mg/L	1	2/5/2008 1:08:00 AM
Cadmium	ND		0.00200	mg/L	1	2/5/2008 1:08:00 AM
Calcium	151		0.500	mg/L	1	2/5/2008 1:08:00 AM
Chromium	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Cobalt	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Copper	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Iron	2.39		0.200	mg/L	1	2/5/2008 1:08:00 AM
Lead	ND		0.00500	mg/L	1	2/5/2008 3:18:00 PM
Magnesium	44.0		0.200	mg/L	1	2/5/2008 1:08:00 AM
Manganese	0.152		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Molybdenum	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Nickel	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Potassium	1.02		0.200	mg/L	1	2/5/2008 1:08:00 AM
Selenium	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Silver	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Sodium	14.1		1.00	mg/L	1	2/5/2008 1:08:00 AM
Vanadium	ND		0.00500	mg/L	1	2/5/2008 1:08:00 AM
Zinc	0.00661		0.00500	mg/L	1	2/5/2008 1:08:00 AM

TCL SEMIVOLATILE ORGANICS**SW8270**

Prep Date: 2/4/2008

Analyst: ACN

1,2,4-Trichlorobenzene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
1,2-Dichlorobenzene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
1,3-Dichlorobenzene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
1,4-Dichlorobenzene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4,5-Trichlorophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4,6-Trichlorophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4-Dichlorophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4-Dimethylphenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4-Dinitrophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,4-Dinitrotoluene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2,6-Dinitrotoluene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Chloronaphthalene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Chlorophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Methylnaphthalene	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Methylphenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Nitroaniline	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
2-Nitrophenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
3&4-Methylphenol	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
3,3'-Dichlorobenzidine	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM
3-Nitroaniline	ND	0.0050	mg/L	1	2/4/2008 6:10:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: February 08, 2008

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Sample ID: T-438

Lab ID: 0802026-01

Collection Date: 2/1/2008 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
4,6-Dinitro-2-methylphenol	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Bromophenyl phenyl ether	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Chloro-3-methylphenol	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Chloroaniline	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Chlorophenyl phenyl ether	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Nitroaniline	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
4-Nitrophenol	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Acenaphthene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Acenaphthylene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Anthracene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Benz(a)anthracene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Benzo(a)pyrene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Benzo(b)fluoranthene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Benzo(g,h,i)perylene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Benzo(k)fluoranthene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Bis(2-chloroethoxy)methane	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Bis(2-chloroethyl)ether	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Bis(2-chloroisopropyl)ether	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Bis(2-ethylhexyl)phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Butyl benzyl phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Carbazole	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Chrysene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Di-n-butyl phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Di-n-octyl phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Dibenz(a,h)anthracene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Dibenzofuran	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Diethyl phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Dimethyl phthalate	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Fluoranthene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Fluorene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Hexachlorobenzene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Hexachlorobutadiene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Hexachlorocyclopentadiene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Hexachloroethane	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Indeno(1,2,3-cd)pyrene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Isophorone	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
N-Nitrosodi-n-propylamine	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
N-Nitrosodiphenylamine	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Naphthalene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Nitrobenzene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Pentachlorophenol	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

P - Dual Column results percent difference > 40%

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

H - Analyzed outside of Hold Time

AR Page 3 of 6

e-Lab Analytical, Inc.

Date: February 08, 2008

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Sample ID: T-438

Lab ID: 0802026-01

Collection Date: 2/1/2008 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Phenanthrene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Phenol	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Pyrene	ND		0.0050	mg/L	1	2/4/2008 6:10:00 PM
Surr: 2,4,6-Tribromophenol	64.1		42-124	%REC	1	2/4/2008 6:10:00 PM
Surr: 2-Fluorobiphenyl	63.5		48-120	%REC	1	2/4/2008 6:10:00 PM
Surr: 2-Fluorophenol	60.2		20-120	%REC	1	2/4/2008 6:10:00 PM
Surr: 4-Terphenyl-d14	68.7		51-135	%REC	1	2/4/2008 6:10:00 PM
Surr: Nitrobenzene-d5	62.6		41-120	%REC	1	2/4/2008 6:10:00 PM
Surr: Phenol-d6	66.2		20-120	%REC	1	2/4/2008 6:10:00 PM
VOLATILES BY GC/MS			SW8260	Analyst: PC		
1,1,1-Trichloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
1,1,2,2-Tetrachloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
1,1,2-Trichloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
1,1-Dichloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
1,1-Dichloroethene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
1,2-Dichloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
2-Butanone	0.038		0.010	mg/L	1	2/4/2008 4:54:00 PM
2-Chloroethyl vinyl ether	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
2-Hexanone	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
4-Methyl-2-pentanone	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Acetone	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Benzene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Bromodichloromethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Bromoform	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Bromomethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Carbon disulfide	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Carbon tetrachloride	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Chlorobenzene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Chloroethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Chloroform	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Chloromethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
cis-1,3-Dichloropropene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Dibromochloromethane	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Ethylbenzene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
m,p-Xylene	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Methylene chloride	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Styrene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Tetrachloroethene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Toluene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
trans-1,3-Dichloropropene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: February 08, 2008

Client: Navajo Refining Company

Project: RO Reject Annual

Work Order: 0802026

Sample ID: T-438

Lab ID: 0802026-01

Collection Date: 2/1/2008 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Trichloroethene	ND		0.0050	mg/L	1	2/4/2008 4:54:00 PM
Vinyl acetate	ND		0.010	mg/L	1	2/4/2008 4:54:00 PM
Vinyl chloride	ND		0.0020	mg/L	1	2/4/2008 4:54:00 PM
Xylenes, Total	ND		0.015	mg/L	1	2/4/2008 4:54:00 PM
Surr: 1,2-Dichloroethane-d4	84.9		70-125	%REC	1	2/4/2008 4:54:00 PM
Surr: 4-Bromofluorobenzene	82.3		72-125	%REC	1	2/4/2008 4:54:00 PM
Surr: Dibromofluoromethane	80.8		71-125	%REC	1	2/4/2008 4:54:00 PM
Surr: Toluene-d8	83.7		75-125	%REC	1	2/4/2008 4:54:00 PM
ANIONS BY ION CHROMATOGRAPHY			E300			Analyst: RPM
Chloride	14.9		0.500	mg/L	1	2/2/2008 11:43:00 AM
Fluoride	1.04		0.100	mg/L	1	2/2/2008 11:43:00 AM
Nitrogen, Nitrate (As N)	0.700		0.100	mg/L	1	2/2/2008 11:43:00 AM
Sulfate	405		5.00	mg/L	10	2/2/2008 12:29:00 PM
Surr: Selenate (surr)	101		85-115	%REC	10	2/2/2008 12:29:00 PM
Surr: Selenate (surr)	104		85-115	%REC	1	2/2/2008 11:43:00 AM
ALKALINITY			E310.1			Analyst: MAM
Alkalinity, Bicarbonate (As CaCO3)	201		5.00	mg/L	1	2/4/2008 8:00:00 PM
Alkalinity, Carbonate (As CaCO3)	ND		5.00	mg/L	1	2/4/2008 8:00:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND		5.00	mg/L	1	2/4/2008 8:00:00 PM
Alkalinity, Total (As CaCO3)	201		5.00	mg/L	1	2/4/2008 8:00:00 PM
BOD, 5 DAY, 20°C			E405.1			Prep Date: 2/3/2008 Analyst: DM
Biochemical Oxygen Demand	ND		2.00	mg/L	1	2/3/2008 8:30:00 AM
CYANIDE, TOTAL			E335.3			Analyst: RPM
Cyanide	ND		0.0200	mg/L	1	2/4/2008 8:00:00 AM
CHEMICAL OXYGEN DEMAND			E410.4			Analyst: DM
Chemical Oxygen Demand	ND		15.0	mg/L	1	2/4/2008 10:00:00 AM
AMMONIA AS N			SM4500 NH3-B-F			Analyst: DM
Nitrogen, Ammonia (as N)	0.156		0.0250	mg/L	1	2/5/2008 7:30:00 AM
PH			E150.1			Analyst: RPM
pH	7.03	H	0.100	pH units	1	2/2/2008
PHENOLICS			E420.1			Analyst: DM
Phenolics, Total Recoverable	ND		0.0500	mg/L	1	2/4/2008 2:30:00 PM
TOTAL DISSOLVED SOLIDS			E160.1			Analyst: KKP
Total Dissolved Solids (Residue, Filterable)	902		10.0	mg/L	1	2/4/2008 11:00:00 AM
TOTAL SUSPENDED SOLIDS			E160.2			Analyst: KKP

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 P - Dual Column results percent difference > 40%
 E - Value above quantitation range
 H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.**Date:** February 08, 2008**Client:** Navajo Refining Company**Project:** RO Reject Annual**Work Order:** 0802026**Sample ID:** T-438**Lab ID:** 0802026-01**Collection Date:** 2/1/2008 3:00:00 PM**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Suspended Solids (Residue, Non-Filterable)	12.0		2.00	mg/L	1	2/4/2008 10:00:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

P - Dual Column results percent difference > 40%

E - Value above quantitation range

H - Analyzed outside of Hold Time

CLIENT: Navajo Refining Company

QC BATCH REPORT

Work Order: 0802026

Project: RO Reject Annual

Batch ID: 28045

Instrument ID ECD_1

Method: SW8081

MBLK		Sample ID: PBLKW1-080204		Units: µg/L		Analysis Date: 02/05/08 0:57				
Client ID:		Run ID: ECD_1_080204B		SeqNo: 1320715		Prep Date: 2/4/2008		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	ND	0.10								
4,4'-DDE	ND	0.10								
4,4'-DDT	ND	0.10								
Aldrin	ND	0.050								
alpha-BHC	ND	0.050								
beta-BHC	ND	0.050								
Chlordane	ND	0.50								
delta-BHC	ND	0.050								
Dieldrin	ND	0.10								
Endosulfan I	ND	0.050								
Endosulfan II	ND	0.10								
Endosulfan sulfate	ND	0.10								
Endrin	ND	0.10								
Endrin aldehyde	ND	0.10								
Endrin ketone	ND	0.10								
gamma-BHC	ND	0.050								
Heptachlor	ND	0.050								
Heptachlor epoxide	ND	0.050								
Methoxychlor	ND	0.50								
Toxaphene	ND	0.50								
Surr: Decachlorobiphenyl	0.2215	0.10	0.2	0	111	54.9-145	0			
Surr: Tetrachloro-m-xylene	0.2034	0.050	0.2	0	102	51.5-142	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28045 Instrument ID ECD_1 Method: SW8081

LCS Sample ID: PLCSW1-080204 Units: µg/L Analysis Date: 02/05/08 1:31

Client ID: Run ID: ECD_1_080204B SeqNo: 1320716 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4139	0.10	0.5	0	82.8	53-144	0			
4,4'-DDE	0.4063	0.10	0.5	0	81.3	55-144	0			
4,4'-DDT	0.436	0.10	0.5	0	87.2	53-149	0			
Aldrin	0.1889	0.050	0.25	0	75.5	47-141	0			
alpha-BHC	0.2077	0.050	0.25	0	83.1	51-141	0			
beta-BHC	0.1874	0.050	0.25	0	75	58-144	0			
delta-BHC	0.1775	0.050	0.25	0	71	48-146	0			
Dieldrin	0.4257	0.10	0.5	0	85.1	56-144	0			
Endosulfan I	0.2194	0.050	0.25	0	87.7	55-141	0			P
Endosulfan II	0.4033	0.10	0.5	0	80.7	57-144	0			
Endosulfan sulfate	0.4043	0.10	0.5	0	80.9	58-145	0			
Endrin	0.4833	0.10	0.5	0	96.7	60-163	0			
Endrin aldehyde	0.4262	0.10	0.5	0	85.2	59-158	0			
Endrin ketone	0.4451	0.10	0.5	0	89	59-154	0			
gamma-BHC	0.2189	0.050	0.25	0	87.5	53-142	0			
Heptachlor	0.2306	0.050	0.25	0	92.3	51-144	0			
Heptachlor epoxide	0.1919	0.050	0.25	0	76.8	55-142	0			
Methoxychlor	2.325	0.50	2.5	0	93	59-150	0			
Surr: Decachlorobiphenyl	0.1886	0.10	0.2	0	94.3	61-154	0			
Surr: Tetrachloro-m-xylene	0.1725	0.050	0.2	0	86.3	60-144	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28045 Instrument ID ECD_1 Method: SW8081

LCSD Sample ID: PLCSDW1-080204 Units: µg/L Analysis Date: 02/05/08 2:05

Client ID: Run ID: ECD_1_080204B SeqNo: 1320717 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4072	0.10	0.5	0	81.4	53-144	0.4139	1.63	30	
4,4'-DDE	0.3958	0.10	0.5	0	79.2	55-144	0.4063	2.61	30	
4,4'-DDT	0.4274	0.10	0.5	0	85.5	53-149	0.436	2	30	
Aldrin	0.1856	0.050	0.25	0	74.2	47-141	0.1889	1.75	30	
alpha-BHC	0.203	0.050	0.25	0	81.2	51-141	0.2077	2.31	30	
beta-BHC	0.1831	0.050	0.25	0	73.2	58-144	0.1874	2.33	30	
delta-BHC	0.1746	0.050	0.25	0	69.8	48-146	0.1775	1.65	30	
Dieldrin	0.4192	0.10	0.5	0	83.8	56-144	0.4257	1.53	30	
Endosulfan I	0.2157	0.050	0.25	0	86.3	55-141	0.2194	1.68	30	P
Endosulfan II	0.3972	0.10	0.5	0	79.4	57-144	0.4033	1.53	30	
Endosulfan sulfate	0.3967	0.10	0.5	0	79.3	58-145	0.4043	1.9	30	
Endrin	0.4661	0.10	0.5	0	93.2	60-163	0.4833	3.63	30	
Endrin aldehyde	0.4203	0.10	0.5	0	84.1	59-158	0.4262	1.38	30	
Endrin ketone	0.4416	0.10	0.5	0	88.3	59-154	0.4451	0.803	30	
gamma-BHC	0.2142	0.050	0.25	0	85.7	53-142	0.2189	2.13	30	
Heptachlor	0.2222	0.050	0.25	0	88.9	51-144	0.2306	3.75	30	
Heptachlor epoxide	0.1888	0.050	0.25	0	75.5	55-142	0.1919	1.62	30	
Methoxychlor	2.282	0.50	2.5	0	91.3	59-150	2.325	1.87	30	
Surr: Decachlorobiphenyl	0.1889	0.10	0.2	0	94.5	61-154	0.1886	0.143	30	
Surr: Tetrachloro-m-xylene	0.1702	0.050	0.2	0	85.1	60-144	0.1725	1.34	30	

The following samples were analyzed in this batch:

0802026-011

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28050 Instrument ID ECD_7 Method: SW8082

MBLK Sample ID: PBLKW2-080204 Units: µg/L Analysis Date: 02/04/08 14:51

Client ID: Run ID: ECD_7_080201B SeqNo: 1320746 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	0.2103	0.050	0.2	0	105	54-140	0			
Surr: Tetrachloro-m-xylene	0.2202	0.050	0.2	0	110	53-137	0			

LCS Sample ID: PLCSW2-080204 Units: µg/L Analysis Date: 02/04/08 15:26

Client ID: Run ID: ECD_7_080201B SeqNo: 1320748 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.29	0.50	5	0	85.8	54-138	0			
Aroclor 1260	4.503	0.50	5	0	90.1	57-136	0			
Surr: Decachlorobiphenyl	0.1838	0.050	0.2	0	91.9	54-140	0			
Surr: Tetrachloro-m-xylene	0.1849	0.050	0.2	0	92.4	53-137	0			

LCSD Sample ID: PLCSDW2-080204 Units: µg/L Analysis Date: 02/04/08 16:00

Client ID: Run ID: ECD_7_080201B SeqNo: 1320750 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.404	0.50	5	0	88.1	54-138	4.29	2.64	20	
Aroclor 1260	4.773	0.50	5	0	95.5	57-136	4.503	5.81	20	
Surr: Decachlorobiphenyl	0.1908	0.050	0.2	0	95.4	54-140	0.1838	3.69	20	
Surr: Tetrachloro-m-xylene	0.1865	0.050	0.2	0	93.3	53-137	0.1849	0.872	20	

The following samples were analyzed in this batch:

0802026-01J

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **28053** Instrument ID **Mercury** Method: **SW7470**

MBLK Sample ID: **GBLKW3-020408** Units: **mg/L** Analysis Date: **02/04/08 17:37**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320083** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **GLCSW3-020408** Units: **mg/L** Analysis Date: **02/04/08 17:39**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320084** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00501	0.00020	0.005	0	100	85-115	0			

LCSD Sample ID: **GLCSDW3-020408** Units: **mg/L** Analysis Date: **02/04/08 17:41**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320085** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00489	0.00020	0.005	0	97.8	85-115	0.00501	2.42	20	

MS Sample ID: **0801598-07CMS** Units: **mg/L** Analysis Date: **02/04/08 17:47**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320088** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0051	0.00020	0.005	-0.000032	103	85-115	0			

MSD Sample ID: **0801598-07CMSD** Units: **mg/L** Analysis Date: **02/04/08 17:49**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320089** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00515	0.00020	0.005	-0.000032	104	85-115	0.0051	0.976	20	

DUP Sample ID: **0801598-07CDUP** Units: **mg/L** Analysis Date: **02/04/08 17:45**

Client ID: Run ID: **MERCURY_080204C** SeqNo: **1320087** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	-0.000032	0	20	

The following samples were analyzed in this batch:

0802026-01D

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28064 Instrument ID ICPMS03 Method: SW6020

MBLK Sample ID: MBLKW2-020408 Units: mg/L Analysis Date: 02/04/08 21:51

Client ID: Run ID: ICPMS03_080204A SeqNo: 1320320 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Silver	ND	0.0050								
Sodium	0.8063	1.0								J
Vanadium	0.001482	0.0050								J
Zinc	ND	0.0050								

MBLK Sample ID: MBLKW2-020408 Units: mg/L Analysis Date: 02/05/08 14:43

Client ID: Run ID: ICPMS03_080205A SeqNo: 1320794 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Boron	ND	0.020								
Lead	ND	0.0050								

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28064 Instrument ID ICPMS03 Method: SW6020

LCS Sample ID: MLCSW2-020408 Units: mg/L Analysis Date: 02/04/08 21:57

Client ID: Run ID: ICPMS03_080204A SeqNo: 1320321 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05161	0.0050	0.05	0	103	80-120	0			
Barium	0.05534	0.0050	0.05	0	111	80-120	0			
Beryllium	0.05314	0.0020	0.05	0	106	80-120	0			
Cadmium	0.05574	0.0020	0.05	0	111	80-120	0			
Calcium	4.833	0.50	5	0	96.7	80-120	0			
Chromium	0.05062	0.0050	0.05	0	101	80-120	0			
Cobalt	0.05392	0.0050	0.05	0	108	80-120	0			
Copper	0.04811	0.0050	0.05	0	96.2	80-120	0			
Iron	5.181	0.20	5	0	104	80-120	0			
Magnesium	4.908	0.20	5	0	98.2	80-120	0			
Manganese	0.05216	0.0050	0.05	0	104	80-120	0			
Molybdenum	0.05164	0.0050	0.05	0	103	80-120	0			
Nickel	0.04965	0.0050	0.05	0	99.3	80-120	0			
Potassium	4.965	0.20	5	0	99.3	80-120	0			
Selenium	0.05226	0.0050	0.05	0	105	80-120	0			
Silver	0.05095	0.0050	0.05	0	102	80-120	0			
Sodium	5.444	1.0	5	0	109	80-120	0			
Vanadium	0.05247	0.0050	0.05	0	105	80-120	0			
Zinc	0.05245	0.0050	0.05	0	105	80-120	0			

LCS Sample ID: MLCSW2-020408 Units: mg/L Analysis Date: 02/05/08 15:06

Client ID: Run ID: ICPMS03_080205A SeqNo: 1320864 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.05184	0.010	0.05	0	104	80-120	0			
Boron	0.5438	0.020	0.5	0	109	80-120	0			
Lead	0.05176	0.0050	0.05	0	104	80-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28064 Instrument ID ICPMS03 Method: SW6020

MS		Sample ID: 0802005-04CMS				Units: mg/L		Analysis Date: 02/04/08 22:26		
Client ID:		Run ID: ICPMS03_080204A				SeqNo: 1320326		Prep Date: 2/4/2008		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05203	0.0050	0.05	-2.366E-06	104	80-120	0			
Barium	0.05553	0.0050	0.05	0.0004985	110	80-120	0			
Beryllium	0.05371	0.0020	0.05	-0.00000282	107	80-120	0			
Cadmium	0.05607	0.0020	0.05	0.00001234	112	80-120	0			
Calcium	4.841	0.50	5	0.1696	93.4	80-120	0			
Chromium	0.05093	0.0050	0.05	0.0002447	101	80-120	0			
Cobalt	0.05406	0.0050	0.05	0.00002585	108	80-120	0			
Copper	0.04856	0.0050	0.05	-0.001684	100	80-120	0			
Iron	5.865	0.20	5	-0.0135	118	80-120	0			
Magnesium	4.771	0.20	5	0.02998	94.8	80-120	0			
Manganese	0.05145	0.0050	0.05	0.0003974	102	80-120	0			
Molybdenum	0.05383	0.0050	0.05	0.00005365	108	80-120	0			
Nickel	0.0492	0.0050	0.05	-0.0003162	99	80-120	0			
Potassium	4.922	0.20	5	-0.02706	99	80-120	0			
Selenium	0.05231	0.0050	0.05	-0.003186	111	80-120	0			
Silver	0.05188	0.0050	0.05	-5.639E-06	104	80-120	0			
Sodium	5.148	1.0	5	0.6428	90.1	80-120	0			
Vanadium	0.05108	0.0050	0.05	0.0006352	101	80-120	0			
Zinc	0.09017	0.0050	0.05	-0.0003711	181	80-120	0			S

MS		Sample ID: 0802005-04CMS				Units: mg/L		Analysis Date: 02/05/08 15:59		
Client ID:		Run ID: ICPMS03_080205A				SeqNo: 1321047		Prep Date: 2/4/2008		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.05834	0.010	0.05	0.007833	101	80-120	0			
Boron	0.5766	0.020	0.5	0.01019	113	80-120	0			
Lead	0.05312	0.0050	0.05	0.0003635	106	80-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28064 Instrument ID ICPMS03 Method: SW6020

MSD Sample ID: 0802005-04CMSD Units: mg/L Analysis Date: 02/04/08 22:32

Client ID: Run ID: ICPMS03_080204A SeqNo: 1320327 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05306	0.0050	0.05	-2.366E-06	106	80-120	0.05203	1.96	15	
Barium	0.05588	0.0050	0.05	0.0004985	111	80-120	0.05553	0.628	15	
Beryllium	0.0541	0.0020	0.05	-0.00000282	108	80-120	0.05371	0.723	15	
Cadmium	0.05731	0.0020	0.05	0.00001234	115	80-120	0.05607	2.19	15	
Calcium	4.802	0.50	5	0.1696	92.6	80-120	4.841	0.809	15	
Chromium	0.05027	0.0050	0.05	0.0002447	100	80-120	0.05093	1.3	15	
Cobalt	0.05429	0.0050	0.05	0.00002585	109	80-120	0.05406	0.425	15	
Copper	0.04896	0.0050	0.05	-0.001684	101	80-120	0.04856	0.82	15	
Iron	5.205	0.20	5	-0.0135	104	80-120	5.865	11.9	15	
Magnesium	4.796	0.20	5	0.02998	95.3	80-120	4.771	0.523	15	
Manganese	0.05005	0.0050	0.05	0.0003974	99.3	80-120	0.05145	2.76	15	
Molybdenum	0.05424	0.0050	0.05	0.00005365	108	80-120	0.05383	0.759	15	
Nickel	0.04957	0.0050	0.05	-0.0003162	99.8	80-120	0.0492	0.749	15	
Potassium	4.882	0.20	5	-0.02706	98.2	80-120	4.922	0.816	15	
Selenium	0.05274	0.0050	0.05	-0.003186	112	80-120	0.05231	0.819	15	
Silver	0.05307	0.0050	0.05	-5.639E-06	106	80-120	0.05188	2.27	15	
Sodium	5.112	1.0	5	0.6428	89.4	80-120	5.148	0.702	15	
Vanadium	0.05243	0.0050	0.05	0.0006352	104	80-120	0.05108	2.61	15	
Zinc	0.05227	0.0050	0.05	-0.0003711	105	80-120	0.09017	53.2	15	R

MSD Sample ID: 0802005-04CMSD Units: mg/L Analysis Date: 02/05/08 16:05

Client ID: Run ID: ICPMS03_080205A SeqNo: 1321048 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.05472	0.010	0.05	0.007833	93.8	80-120	0.05834	6.4	15	
Boron	0.5802	0.020	0.5	0.01019	114	80-120	0.5766	0.622	15	
Lead	0.0526	0.0050	0.05	0.0003635	104	80-120	0.05312	0.984	15	

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E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28064 Instrument ID ICPMS03 Method: SW6020

DUP Sample ID: 0802005-04CDUP Units: mg/L Analysis Date: 02/04/08 22:14
 Client ID: Run ID: ICPMS03_080204A SeqNo: 1320324 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050	0	0	0	0-0	-2.366E-06	0	25	
Barium	ND	0.0050	0	0	0	0-0	0.0004985	0	25	
Beryllium	ND	0.0020	0	0	0	0-0	-0.00000282	0	25	
Cadmium	ND	0.0020	0	0	0	0-0	0.00001234	0	25	
Calcium	0.1176	0.50	0	0	0	0-0	0.1696	0	25	J
Chromium	ND	0.0050	0	0	0	0-0	0.0002447	0	25	
Cobalt	ND	0.0050	0	0	0	0-0	0.00002585	0	25	
Copper	ND	0.0050	0	0	0	0-0	-0.001684	0	25	
Iron	ND	0.20	0	0	0	0-0	-0.0135	0	25	
Magnesium	ND	0.20	0	0	0	0-0	0.02998	0	25	
Manganese	ND	0.0050	0	0	0	0-0	0.0003974	0	25	
Molybdenum	ND	0.0050	0	0	0	0-0	0.00005365	0	25	
Nickel	ND	0.0050	0	0	0	0-0	-0.0003162	0	25	
Potassium	ND	0.20	0	0	0	0-0	-0.02706	0	25	
Selenium	ND	0.0050	0	0	0	0-0	-0.003186	0	25	
Silver	ND	0.0050	0	0	0	0-0	-5.639E-06	0	25	
Sodium	0.5806	1.0	0	0	0	0-0	0.6428	0	25	J
Vanadium	0.001043	0.0050	0	0	0	0-0	0.0006352	0	25	J
Zinc	0.001777	0.0050	0	0	0	0-0	-0.0003711	0	25	J

DUP Sample ID: 0802005-04CDUP Units: mg/L Analysis Date: 02/05/08 15:35
 Client ID: Run ID: ICPMS03_080205A SeqNo: 1320948 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.0078	0.010	0	0	0	0-0	0.007833	0	25	J
Boron	ND	0.020	0	0	0	0-0	0.01019	0	25	
Lead	0.000418	0.0050	0	0	0	0-0	0.0003635	0	25	J

The following samples were analyzed in this batch:

0802026-01D

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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U - Analyzed for but not detected

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28046 Instrument ID SV-5 Method: SW8270

MBLK Sample ID: SBLKW1-080204 Units: µg/L Analysis Date: 02/04/08 16:55

Client ID: Run ID: SV-5_080204A SeqNo: 1320266 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
2-Nitroaniline	ND	5.0								
2-Nitrophenol	ND	5.0								
3&4-Methylphenol	ND	5.0								
3,3'-Dichlorobenzidine	ND	5.0								
3-Nitroaniline	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
4-Bromophenyl phenyl ether	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
4-Nitroaniline	ND	5.0								
4-Nitrophenol	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Anthracene	ND	5.0								
Benz(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	5.0								
Benzo(b)fluoranthene	ND	5.0								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	5.0								
Butyl benzyl phthalate	ND	5.0								

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R - RPD outside accepted recovery limits

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E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28046		Instrument ID SV-5		Method: SW8270	
Carbazole	ND	5.0			
Chrysene	ND	5.0			
Di-n-butyl phthalate	ND	5.0			
Di-n-octyl phthalate	ND	5.0			
Dibenz(a,h)anthracene	ND	5.0			
Dibenzofuran	ND	5.0			
Diethyl phthalate	ND	5.0			
Dimethyl phthalate	ND	5.0			
Fluoranthene	ND	5.0			
Fluorene	ND	5.0			
Hexachlorobenzene	ND	5.0			
Hexachlorobutadiene	ND	5.0			
Hexachlorocyclopentadiene	ND	5.0			
Hexachloroethane	ND	5.0			
Indeno(1,2,3-cd)pyrene	ND	5.0			
Isophorone	ND	5.0			
N-Nitrosodi-n-propylamine	ND	5.0			
N-Nitrosodiphenylamine	ND	5.0			
Naphthalene	ND	5.0			
Nitrobenzene	ND	5.0			
Pentachlorophenol	ND	5.0			
Phenanthrene	ND	5.0			
Phenol	ND	5.0			
Pyrene	ND	5.0			
<i>Surr: 2,4,6-Tribromophenol</i>	<i>69.93</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>69.9 42-124 0</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>71.63</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>71.6 48-120 0</i>
<i>Surr: 2-Fluorophenol</i>	<i>64.83</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>64.8 20-120 0</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>79.87</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>79.9 51-135 0</i>
<i>Surr: Nitrobenzene-d5</i>	<i>69.89</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>69.9 41-120 0</i>
<i>Surr: Phenol-d6</i>	<i>70.08</i>	<i>5.0</i>	<i>100</i>	<i>0</i>	<i>70.1 20-120 0</i>

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U - Analyzed for but not detected

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CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **28046** Instrument ID **SV-5** Method: **SW8270**

LCS Sample ID: **SLCSW1-080204** Units: **µg/L** Analysis Date: **02/04/08 17:20**

Client ID: Run ID: **SV-5_080204A** SeqNo: **1320267** Prep Date: **2/4/2008** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	39.2	5.0	50	0	78.4	54-118	0			
1,2-Dichlorobenzene	40.15	5.0	50	0	80.3	49-115	0			
1,3-Dichlorobenzene	39.48	5.0	50	0	79	56-115	0			
1,4-Dichlorobenzene	39.79	5.0	50	0	79.6	56-115	0			
2,4,5-Trichlorophenol	84.75	5.0	100	0	84.7	52-115	0			
2,4,6-Trichlorophenol	84.8	5.0	100	0	84.8	56-115	0			
2,4-Dichlorophenol	85.21	5.0	100	0	85.2	53-115	0			
2,4-Dimethylphenol	84.19	5.0	100	0	84.2	53-115	0			
2,4-Dinitrophenol	85.59	5.0	100	0	85.6	47-115	0			
2,4-Dinitrotoluene	44.99	5.0	50	0	90	56-115	0			
2,6-Dinitrotoluene	44.35	5.0	50	0	88.7	57-115	0			
2-Chloronaphthalene	48.28	5.0	50	0	96.6	65-125	0			
2-Chlorophenol	83.05	5.0	100	0	83	54-115	0			
2-Methylnaphthalene	41.59	5.0	50	0	83.2	46-117	0			
2-Methylphenol	87.85	5.0	100	0	87.9	53-115	0			
2-Nitroaniline	44.33	5.0	50	0	88.7	53-123	0			
2-Nitrophenol	83.76	5.0	100	0	83.8	53-115	0			
3&4-Methylphenol	131.7	5.0	150	0	87.8	48-115	0			
3,3'-Dichlorobenzidine	39.68	5.0	50	0	79.4	25-115	0			
3-Nitroaniline	37.51	5.0	50	0	75	26-115	0			
4,6-Dinitro-2-methylphenol	96.44	5.0	100	0	96.4	51-121	0			
4-Bromophenyl phenyl ether	41.78	5.0	50	0	83.6	49-115	0			
4-Chloro-3-methylphenol	89.02	5.0	100	0	89	51-115	0			
4-Chloroaniline	35.48	5.0	50	0	71	21-115	0			
4-Chlorophenyl phenyl ether	43.26	5.0	50	0	86.5	56-115	0			
4-Nitroaniline	43.08	5.0	50	0	86.2	47-115	0			
4-Nitrophenol	83.9	5.0	100	0	83.9	26-133	0			
Acenaphthene	42.51	5.0	50	0	85	57-115	0			
Acenaphthylene	43.04	5.0	50	0	86.1	57-118	0			
Anthracene	42.77	5.0	50	0	85.5	65-115	0			
Benz(a)anthracene	43.57	5.0	50	0	87.1	53-115	0			
Benzo(a)pyrene	43.28	5.0	50	0	86.6	57-115	0			
Benzo(b)fluoranthene	40.88	5.0	50	0	81.8	54-117	0			
Benzo(g,h,i)perylene	42.51	5.0	50	0	85	56-115	0			
Benzo(k)fluoranthene	42.64	5.0	50	0	85.3	50-115	0			
Bis(2-chloroethoxy)methane	42.34	5.0	50	0	84.7	54-115	0			
Bis(2-chloroethyl)ether	41.88	5.0	50	0	83.8	56-115	0			
Bis(2-chloroisopropyl)ether	43.3	5.0	50	0	86.6	48-115	0			
Bis(2-ethylhexyl)phthalate	45.72	5.0	50	0	91.4	50-115	0			
Butyl benzyl phthalate	45.38	5.0	50	0	90.8	51-115	0			

ND - Not Detected at the Reporting Limit

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28046	Instrument ID SV-5		Method: SW8270				
Carbazole	43.12	5.0	50	0	86.2	57-115	0
Chrysene	42.72	5.0	50	0	85.4	58-115	0
Di-n-butyl phthalate	44.71	5.0	50	0	89.4	54-115	0
Di-n-octyl phthalate	46.26	5.0	50	0	92.5	49-115	0
Dibenz(a,h)anthracene	43.85	5.0	50	0	87.7	56-115	0
Dibenzofuran	42.35	5.0	50	0	84.7	56-115	0
Diethyl phthalate	44.16	5.0	50	0	88.3	57-115	0
Dimethyl phthalate	43.46	5.0	50	0	86.9	56-115	0
Fluoranthene	43.34	5.0	50	0	86.7	58-115	0
Fluorene	43.58	5.0	50	0	87.2	56-115	0
Hexachlorobenzene	42.03	5.0	50	0	84.1	54-115	0
Hexachlorobutadiene	38.94	5.0	50	0	77.9	51-115	0
Hexachlorocyclopentadiene	41.91	5.0	50	0	83.8	48-115	0
Hexachloroethane	39.29	5.0	50	0	78.6	54-115	0
Indeno(1,2,3-cd)pyrene	45.82	5.0	50	0	91.6	51-115	0
Isophorone	43.49	5.0	50	0	87	55-115	0
N-Nitrosodi-n-propylamine	43.97	5.0	50	0	87.9	55-115	0
N-Nitrosodiphenylamine	42.59	5.0	50	0	85.2	52-115	0
Naphthalene	40.69	5.0	50	0	81.4	55-115	0
Nitrobenzene	40.78	5.0	50	0	81.6	40-124	0
Pentachlorophenol	83.19	5.0	100	0	83.2	45-125	0
Phenanthrene	42.73	5.0	50	0	85.5	57-115	0
Phenol	83.18	5.0	100	0	83.2	38-115	0
Pyrene	43.43	5.0	50	0	86.9	51-115	0
Surr: 2,4,6-Tribromophenol	74.2	5.0	100	0	74.2	42-124	0
Surr: 2-Fluorobiphenyl	74.42	5.0	100	0	74.4	48-120	0
Surr: 2-Fluorophenol	74.74	5.0	100	0	74.7	20-120	0
Surr: 4-Terphenyl-d14	78.79	5.0	100	0	78.8	51-135	0
Surr: Nitrobenzene-d5	72.6	5.0	100	0	72.6	41-120	0
Surr: Phenol-d6	82.06	5.0	100	0	82.1	20-120	0

ND - Not Detected at the Reporting Limit

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R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28046 Instrument ID SV-5 Method: SW8270

LCSD Sample ID: SLCSDW1-080204 Units: µg/L Analysis Date: 02/04/08 17:45

Client ID: Run ID: SV-5_080204A SeqNo: 1320268 Prep Date: 2/4/2008 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	39.38	5.0	50	0	78.8	54-118	39.2	0.459	20	
1,2-Dichlorobenzene	39.67	5.0	50	0	79.3	49-115	40.15	1.21	20	
1,3-Dichlorobenzene	39.16	5.0	50	0	78.3	56-115	39.48	0.803	20	
1,4-Dichlorobenzene	39.27	5.0	50	0	78.5	56-115	39.79	1.3	20	
2,4,5-Trichlorophenol	84.25	5.0	100	0	84.3	52-115	84.75	0.586	20	
2,4,6-Trichlorophenol	83.22	5.0	100	0	83.2	56-115	84.8	1.89	20	
2,4-Dichlorophenol	84.72	5.0	100	0	84.7	53-115	85.21	0.578	20	
2,4-Dimethylphenol	84.26	5.0	100	0	84.3	53-115	84.19	0.0836	20	
2,4-Dinitrophenol	80.09	5.0	100	0	80.1	47-115	85.59	6.65	20	
2,4-Dinitrotoluene	44.92	5.0	50	0	89.8	56-115	44.99	0.159	20	
2,6-Dinitrotoluene	43.31	5.0	50	0	86.6	57-115	44.35	2.38	20	
2-Chloronaphthalene	47.68	5.0	50	0	95.4	65-125	48.28	1.25	20	
2-Chlorophenol	82.22	5.0	100	0	82.2	54-115	83.05	1	20	
2-Methylnaphthalene	40.83	5.0	50	0	81.7	46-117	41.59	1.83	20	
2-Methylphenol	84.72	5.0	100	0	84.7	53-115	87.85	3.63	20	
2-Nitroaniline	44.36	5.0	50	0	88.7	53-123	44.33	0.0696	20	
2-Nitrophenol	84.1	5.0	100	0	84.1	53-115	83.76	0.41	20	
3&4-Methylphenol	128.1	5.0	150	0	85.4	48-115	131.7	2.8	20	
3,3'-Dichlorobenzidine	43.34	5.0	50	0	86.7	25-115	39.68	8.81	20	
3-Nitroaniline	41.05	5.0	50	0	82.1	26-115	37.51	9.01	20	
4,6-Dinitro-2-methylphenol	90.33	5.0	100	0	90.3	51-121	96.44	6.54	20	
4-Bromophenyl phenyl ether	41.8	5.0	50	0	83.6	49-115	41.78	0.0441	20	
4-Chloro-3-methylphenol	88.2	5.0	100	0	88.2	51-115	89.02	0.928	20	
4-Chloroaniline	40.2	5.0	50	0	80.4	21-115	35.48	12.5	20	
4-Chlorophenyl phenyl ether	42.88	5.0	50	0	85.8	56-115	43.26	0.873	20	
4-Nitroaniline	42.27	5.0	50	0	84.5	47-115	43.08	1.91	20	
4-Nitrophenol	81.33	5.0	100	0	81.3	26-133	83.9	3.11	20	
Acenaphthene	41.89	5.0	50	0	83.8	57-115	42.51	1.49	20	
Acenaphthylene	42.64	5.0	50	0	85.3	57-118	43.04	0.951	20	
Anthracene	42.35	5.0	50	0	84.7	65-115	42.77	0.987	20	
Benz(a)anthracene	42.86	5.0	50	0	85.7	53-115	43.57	1.63	20	
Benzo(a)pyrene	42.23	5.0	50	0	84.5	57-115	43.28	2.47	20	
Benzo(b)fluoranthene	40.21	5.0	50	0	80.4	54-117	40.88	1.64	20	
Benzo(g,h,i)perylene	42.2	5.0	50	0	84.4	56-115	42.51	0.718	20	
Benzo(k)fluoranthene	42.69	5.0	50	0	85.4	50-115	42.64	0.118	20	
Bis(2-chloroethoxy)methane	41.14	5.0	50	0	82.3	54-115	42.34	2.88	20	
Bis(2-chloroethyl)ether	41.12	5.0	50	0	82.2	56-115	41.88	1.83	20	
Bis(2-chloroisopropyl)ether	42.16	5.0	50	0	84.3	48-115	43.3	2.68	20	
Bis(2-ethylhexyl)phthalate	44	5.0	50	0	88	50-115	45.72	3.82	20	
Butyl benzyl phthalate	44.04	5.0	50	0	88.1	51-115	45.38	2.99	20	

ND - Not Detected at the Reporting Limit

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: 28046	Instrument ID SV-5			Method: SW8270					
Carbazole	42.05	5.0	50	0	84.1	57-115	43.12	2.51	20
Chrysene	41.75	5.0	50	0	83.5	58-115	42.72	2.3	20
Di-n-butyl phthalate	43.22	5.0	50	0	86.4	54-115	44.71	3.39	20
Di-n-octyl phthalate	44.98	5.0	50	0	90	49-115	46.26	2.8	20
Dibenz(a,h)anthracene	43.31	5.0	50	0	86.6	56-115	43.85	1.23	20
Dibenzofuran	42.12	5.0	50	0	84.2	56-115	42.35	0.529	20
Diethyl phthalate	42.99	5.0	50	0	86	57-115	44.16	2.69	20
Dimethyl phthalate	42.66	5.0	50	0	85.3	56-115	43.46	1.86	20
Fluoranthene	43.07	5.0	50	0	86.1	58-115	43.34	0.641	20
Fluorene	43.04	5.0	50	0	86.1	56-115	43.58	1.24	20
Hexachlorobenzene	41.36	5.0	50	0	82.7	54-115	42.03	1.61	20
Hexachlorobutadiene	38.84	5.0	50	0	77.7	51-115	38.94	0.246	20
Hexachlorocyclopentadiene	41.26	5.0	50	0	82.5	48-115	41.91	1.56	20
Hexachloroethane	39.62	5.0	50	0	79.2	54-115	39.29	0.85	20
Indeno(1,2,3-cd)pyrene	44.28	5.0	50	0	88.6	51-115	45.82	3.42	20
Isophorone	43.19	5.0	50	0	86.4	55-115	43.49	0.676	20
N-Nitrosodi-n-propylamine	42.51	5.0	50	0	85	55-115	43.97	3.37	20
N-Nitrosodiphenylamine	42.11	5.0	50	0	84.2	52-115	42.59	1.15	20
Naphthalene	40.65	5.0	50	0	81.3	55-115	40.69	0.0999	20
Nitrobenzene	40.66	5.0	50	0	81.3	40-124	40.78	0.291	20
Pentachlorophenol	80.75	5.0	100	0	80.8	45-125	83.19	2.97	20
Phenanthrene	42.14	5.0	50	0	84.3	57-115	42.73	1.4	20
Phenol	81.49	5.0	100	0	81.5	38-115	83.18	2.05	20
Pyrene	43.25	5.0	50	0	86.5	51-115	43.43	0.414	20
Surr: 2,4,6-Tribromophenol	76.18	5.0	100	0	76.2	42-124	74.2	2.64	20
Surr: 2-Fluorobiphenyl	75.91	5.0	100	0	75.9	48-120	74.42	1.98	20
Surr: 2-Fluorophenol	75.93	5.0	100	0	75.9	20-120	74.74	1.58	20
Surr: 4-Terphenyl-d14	77.71	5.0	100	0	77.7	51-135	78.79	1.38	20
Surr: Nitrobenzene-d5	74.04	5.0	100	0	74	41-120	72.6	1.97	20
Surr: Phenol-d6	82.03	5.0	100	0	82	20-120	82.06	0.0338	20

The following samples were analyzed in this batch:

0802026-01H

ND - Not Detected at the Reporting Limit

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59565 Instrument ID VOA2 Method: SW8260

MBLK Sample ID: VBLKW-020408 Units: µg/L Analysis Date: 02/04/08 11:14
 Client ID: Run ID: VOA2_080204A SeqNo: 1320586 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	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	43.84	5.0	50	0	87.7	70-125	0			
Surr: 4-Bromofluorobenzene	39.57	5.0	50	0	79.1	72-125	0			
Surr: Dibromofluoromethane	44.34	5.0	50	0	88.7	71-125	0			
Surr: Toluene-d8	41.87	5.0	50	0	83.7	75-125	0			

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59565 Instrument ID VOA2 Method: SW8260

LCS		Sample ID: VLCSW-020408		Units: µg/L			Analysis Date: 02/04/08 10:25			
Client ID:		Run ID: VOA2_080204A		SeqNo: 1320585		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	50.45	5.0	50	0	101	80-120	0			
1,1,2,2-Tetrachloroethane	46.5	5.0	50	0	93	72-120	0			
1,1,2-Trichloroethane	46.73	5.0	50	0	93.5	80-120	0			
1,1-Dichloroethane	49.12	5.0	50	0	98.2	76-120	0			
1,1-Dichloroethene	48.2	5.0	50	0	96.4	73-124	0			
1,2-Dichloroethane	51.21	5.0	50	0	102	78-120	0			
2-Butanone	93.82	10	100	0	93.8	58-132	0			
2-Chloroethyl vinyl ether	93.68	10	100	0	93.7	74-120	0			
2-Hexanone	97.68	10	100	0	97.7	61-130	0			
4-Methyl-2-pentanone	93.85	10	100	0	93.9	65-127	0			
Acetone	99.93	10	100	0	99.9	59-137	0			
Benzene	46.68	5.0	50	0	93.4	73-121	0			
Bromodichloromethane	52.72	5.0	50	0	105	80-120	0			
Bromoform	48.05	5.0	50	0	96.1	79-120	0			
Bromomethane	52.57	5.0	50	0	105	66-137	0			
Carbon disulfide	98.55	10	100	0	98.6	68-141	0			
Carbon tetrachloride	49.34	5.0	50	0	98.7	75-124	0			
Chlorobenzene	45.73	5.0	50	0	91.5	80-120	0			
Chloroethane	47.21	5.0	50	0	94.4	76-121	0			
Chloroform	48.68	5.0	50	0	97.4	80-120	0			
Chloromethane	44.95	5.0	50	0	89.9	67-123	0			
cis-1,3-Dichloropropene	50.77	5.0	50	0	102	80-120	0			
Dibromochloromethane	46.63	5.0	50	0	93.3	80-120	0			
Ethylbenzene	46.5	5.0	50	0	93	80-120	0			
m,p-Xylene	92.64	10	100	0	92.6	78-121	0			
Methylene chloride	49.57	10	50	0	99.1	65-133	0			
Styrene	46.73	5.0	50	0	93.5	80-120	0			
Tetrachloroethene	46.28	5.0	50	0	92.6	79-120	0			
Toluene	45.67	5.0	50	0	91.3	80-120	0			
trans-1,3-Dichloropropene	49.22	5.0	50	0	98.4	80-120	0			
Trichloroethene	47.56	5.0	50	0	95.1	80-120	0			
Vinyl acetate	101.9	10	100	0	102	67-139	0			
Vinyl chloride	45.53	2.0	50	0	91.1	70-127	0			
Xylenes, Total	139.6	15	150	0	93	80-120	0			
Surr: 1,2-Dichloroethane-d4	42.86	5.0	50	0	85.7	70-125	0			
Surr: 4-Bromofluorobenzene	42.03	5.0	50	0	84.1	72-125	0			
Surr: Dibromofluoromethane	43.24	5.0	50	0	86.5	71-125	0			
Surr: Toluene-d8	41.63	5.0	50	0	83.3	75-125	0			

ND - Not Detected at the Reporting Limit

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59565** Instrument ID **VOA2** Method: **SW8260**

MS Sample ID: **0802011-12AMS** Units: **µg/L** Analysis Date: **02/04/08 16:05**

Client ID: Run ID: **VOA2_080204A** SeqNo: **1320588** 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	43.25	5.0	50	0	86.5	80-120	0			
1,1,2,2-Tetrachloroethane	48.49	5.0	50	0	97	72-120	0			
1,1,2-Trichloroethane	48.02	5.0	50	0	96	80-120	0			
1,1-Dichloroethane	47.82	5.0	50	0	95.6	76-120	0			
1,1-Dichloroethene	43.55	5.0	50	0	87.1	73-124	0			
1,2-Dichloroethane	51.93	5.0	50	0	104	78-120	0			
2-Butanone	99.27	10	100	0	99.3	58-132	0			
2-Chloroethyl vinyl ether	ND	10	100	0	0	74-120	0			S
2-Hexanone	101.5	10	100	0	102	61-130	0			
4-Methyl-2-pentanone	101	10	100	0	101	65-127	0			
Acetone	99.79	10	100	0	99.8	59-137	0			
Benzene	44.71	5.0	50	0.1547	89.1	73-121	0			
Bromodichloromethane	53.07	5.0	50	0	106	80-120	0			
Bromoform	49.18	5.0	50	0	98.4	79-120	0			
Bromomethane	46.8	5.0	50	0	93.6	66-137	0			
Carbon disulfide	81.17	10	100	0	81.2	68-141	0			
Carbon tetrachloride	41.17	5.0	50	0	82.3	75-124	0			
Chlorobenzene	43.5	5.0	50	0	87	80-120	0			
Chloroethane	43.96	5.0	50	0	87.9	76-121	0			
Chloroform	47.54	5.0	50	0	95.1	80-120	0			
Chloromethane	40.61	5.0	50	0	81.2	67-123	0			
cis-1,3-Dichloropropene	50.19	5.0	50	0	100	80-120	0			
Dibromochloromethane	46.4	5.0	50	0	92.8	80-120	0			
Ethylbenzene	38.91	5.0	50	0	77.8	80-120	0			S
m,p-Xylene	77.47	10	100	0	77.5	78-121	0			S
Methylene chloride	49.96	10	50	0	99.9	65-133	0			
Styrene	42.32	5.0	50	0	84.6	80-120	0			
Tetrachloroethene	37.89	5.0	50	0	75.8	79-120	0			S
Toluene	42.39	5.0	50	0	84.8	80-120	0			
trans-1,3-Dichloropropene	50.02	5.0	50	0	100	80-120	0			
Trichloroethene	48.9	5.0	50	3.498	90.8	80-120	0			
Vinyl acetate	96.43	10	100	0	96.4	67-139	0			
Vinyl chloride	40.66	2.0	50	0	81.3	70-127	0			
Xylenes, Total	118.4	15	150	0	79	80-120	0			S
Surr: 1,2-Dichloroethane-d4	41.85	5.0	50	0	83.7	70-125	0			
Surr: 4-Bromofluorobenzene	41.08	5.0	50	0	82.2	72-125	0			
Surr: Dibromofluoromethane	42.2	5.0	50	0	84.4	71-125	0			
Surr: Toluene-d8	41.25	5.0	50	0	82.5	75-125	0			

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CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59565 Instrument ID VOA2 Method: SW8260

MSD Sample ID: 0802011-12AMSD Units: µg/L Analysis Date: 02/04/08 16:29

Client ID: Run ID: VOA2_080204A SeqNo: 1320589 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	43.18	5.0	50	0	86.4	80-120	43.25	0.171	20	
1,1,2,2-Tetrachloroethane	50.89	5.0	50	0	102	72-120	48.49	4.83	20	
1,1,2-Trichloroethane	48.36	5.0	50	0	96.7	80-120	48.02	0.714	20	
1,1-Dichloroethane	47.59	5.0	50	0	95.2	76-120	47.82	0.491	20	
1,1-Dichloroethene	42.98	5.0	50	0	86	73-124	43.55	1.33	20	
1,2-Dichloroethane	54.34	5.0	50	0	109	78-120	51.93	4.53	20	
2-Butanone	99.8	10	100	0	99.8	58-132	99.27	0.534	20	
2-Chloroethyl vinyl ether	ND	10	100	0	0	74-120	0	0	20	S
2-Hexanone	108.6	10	100	0	109	61-130	101.5	6.72	20	
4-Methyl-2-pentanone	108.3	10	100	0	108	65-127	101	6.98	20	
Acetone	103.3	10	100	0	103	59-137	99.79	3.45	20	
Benzene	45.05	5.0	50	0.1547	89.8	73-121	44.71	0.748	20	
Bromodichloromethane	54.75	5.0	50	0	109	80-120	53.07	3.12	20	
Bromoform	52.28	5.0	50	0	105	79-120	49.18	6.11	20	
Bromomethane	50.93	5.0	50	0	102	66-137	46.8	8.44	20	
Carbon disulfide	80.34	10	100	0	80.3	68-141	81.17	1.02	20	
Carbon tetrachloride	41.87	5.0	50	0	83.7	75-124	41.17	1.67	20	
Chlorobenzene	44.97	5.0	50	0	89.9	80-120	43.5	3.34	20	
Chloroethane	43.58	5.0	50	0	87.2	76-121	43.96	0.849	20	
Chloroform	46.91	5.0	50	0	93.8	80-120	47.54	1.35	20	
Chloromethane	41.18	5.0	50	0	82.4	67-123	40.61	1.4	20	
cis-1,3-Dichloropropene	51.84	5.0	50	0	104	80-120	50.19	3.24	20	
Dibromochloromethane	48.13	5.0	50	0	96.3	80-120	46.4	3.66	20	
Ethylbenzene	41.94	5.0	50	0	83.9	80-120	38.91	7.51	20	
m,p-Xylene	82.19	10	100	0	82.2	78-121	77.47	5.91	20	
Methylene chloride	48.92	10	50	0	97.8	65-133	49.96	2.1	20	
Styrene	44.08	5.0	50	0	88.2	80-120	42.32	4.08	20	
Tetrachloroethene	39.42	5.0	50	0	78.8	79-120	37.89	3.97	20	S
Toluene	43.73	5.0	50	0	87.5	80-120	42.39	3.1	20	
trans-1,3-Dichloropropene	52.11	5.0	50	0	104	80-120	50.02	4.09	20	
Trichloroethene	48.89	5.0	50	3.498	90.8	80-120	48.9	0.0215	20	
Vinyl acetate	97.34	10	100	0	97.3	67-139	96.43	0.935	20	
Vinyl chloride	40.46	2.0	50	0	80.9	70-127	40.66	0.508	20	
Xylenes, Total	125.8	15	150	0	83.8	80-120	118.4	5.99	20	
Surr: 1,2-Dichloroethane-d4	41.98	5.0	50	0	84	70-125	41.85	0.309	20	
Surr: 4-Bromofluorobenzene	42.86	5.0	50	0	85.7	72-125	41.08	4.25	20	
Surr: Dibromofluoromethane	42.24	5.0	50	0	84.5	71-125	42.2	0.0989	20	
Surr: Toluene-d8	42.67	5.0	50	0	85.3	75-125	41.25	3.39	20	

The following samples were analyzed in this batch:

0802026-01A

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59481 Instrument ID WetChem Method: E150.1

LCS Sample ID: WLCSW1-020208 Units: pH units Analysis Date: 02/02/08 0:00

Client ID: Run ID: WETCHEM_080202A SeqNo: 1319035 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.06	0.10	6	0	101	90-110	0			

DUP Sample ID: 0802026-01EDUP Units: pH units Analysis Date: 02/02/08 0:00

Client ID: T-438 Run ID: WETCHEM_080202A SeqNo: 1319038 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.05	0.10	0	0	0	0-0	7.03	0.284	20	H

The following samples were analyzed in this batch:

0802026-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59521** Instrument ID **ICS3000** Method: **E300**

MBLK Sample ID: **WBLKW1-020108** Units: **mg/L** Analysis Date: **02/01/08 15:37**

Client ID: Run ID: **ICS3000_080201A** SeqNo: **1320542** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								
Surr: Selenate (surr)	5.201	0.10	5	0	104	85-115		0		

LCS Sample ID: **WLCSW1-020108** Units: **mg/L** Analysis Date: **02/01/08 16:00**

Client ID: Run ID: **ICS3000_080201A** SeqNo: **1320543** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.24	0.50	20	0	101	90-110		0		
Fluoride	4.251	0.10	4	0	106	90-110		0		
Nitrogen, Nitrate (As N)	4.119	0.10	4	0	103	90-110		0		
Sulfate	20.38	0.50	20	0	102	90-110		0		
Surr: Selenate (surr)	5.02	0.10	5	0	100	85-115		0		

MS Sample ID: **0801583-01BMS** Units: **mg/L** Analysis Date: **02/01/08 17:09**

Client ID: Run ID: **ICS3000_080201A** SeqNo: **1320546** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	64.5	0.50	10	54.95	95.5	80-120		0		EO
Fluoride	4.775	0.10	2	2.738	102	80-120		0		
Nitrogen, Nitrate (As N)	2.809	0.10	2	0.794	101	80-120		0		H
Sulfate	336.7	0.50	10	330.7	60.6	80-120		0		SEO
Surr: Selenate (surr)	5.21	0.10	5	0	104	85-115		0		

MSD Sample ID: **0801583-01BMSD** Units: **mg/L** Analysis Date: **02/01/08 17:32**

Client ID: Run ID: **ICS3000_080201A** SeqNo: **1320547** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	63.54	0.50	10	54.95	85.9	80-120	64.5	1.49	20	EO
Fluoride	4.694	0.10	2	2.738	97.8	80-120	4.775	1.71	20	
Nitrogen, Nitrate (As N)	2.767	0.10	2	0.794	98.6	80-120	2.809	1.51	20	H
Sulfate	330.7	0.50	10	330.7	0.51	80-120	336.7	1.8	20	SEO
Surr: Selenate (surr)	5.103	0.10	5	0	102	85-115	5.21	2.08	20	

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59521** Instrument ID **ICS3000** Method: **E300**

DUP	Sample ID: 0801583-01BDUP		Units: mg/L				Analysis Date: 02/01/08 16:46			
Client ID:	Run ID: ICS3000_080201A		SeqNo: 1320545		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	54.85	0.50	0	0	0	0-0	54.95	0.188	20	E
Fluoride	2.701	0.10	0	0	0	0-0	2.738	1.36	20	
Nitrogen, Nitrate (As N)	0.793	0.10	0	0	0	0-0	0.794	0.126	20	H
Sulfate	330.8	0.50	0	0	0	0-0	330.7	0.0296	20	E
Surr: Selenate (surr)	5.069	0.10	5	0	101	85-115	5.058	0.217	20	

The following samples were analyzed in this batch:

0802026-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59523** Instrument ID **WetChem** Method: **E410.4**

MBLK Sample ID: **WBLKW1-020408** Units: **mg/L** Analysis Date: **02/04/08 10:00**

Client ID: Run ID: **WETCHEM_080204G** SeqNo: **1319809** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	15								

LCS Sample ID: **WLC SW1-020408** Units: **mg/L** Analysis Date: **02/04/08 10:00**

Client ID: Run ID: **WETCHEM_080204G** SeqNo: **1319810** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	102	15	100	0	102	85-115	0			

MS Sample ID: **0802002-01AMS** Units: **mg/L** Analysis Date: **02/04/08 10:00**

Client ID: Run ID: **WETCHEM_080204G** SeqNo: **1319820** Prep Date: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	94	30	100	0	94	80-120	0			

DUP Sample ID: **0802002-01ADUP** Units: **mg/L** Analysis Date: **02/04/08 10:00**

Client ID: Run ID: **WETCHEM_080204G** SeqNo: **1319819** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	15	0	0	0	0-0	0	0	20	

The following samples were analyzed in this batch:

0802026-01C

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59526 Instrument ID Balance1 Method: E160.2

MBLK	Sample ID: BLANK					Units: mg/L			Analysis Date: 02/04/08 10:00		
Client ID:	Run ID: BALANCE1_080204A					SeqNo: 1319847		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Suspended Solids (Residue, Non-Fi	ND	2.0									

LCS	Sample ID: LCS				Units: mg/L			Analysis Date: 02/04/08 10:00		
Client ID:	Run ID: BALANCE1_080204A				SeqNo: 1319848		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	95	2.0	100	0	95	78-120	0			

DUP	Sample ID: 0802035-01BDUP					Units: mg/L		Analysis Date: 02/04/08 10:00		
Client ID:	Run ID: BALANCE1_080204A				SeqNo: 1319846		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	12	2.0	0	0	0	0-0		13	8	20

DUP	Sample ID: 0802026-01EDUP					Units: mg/L		Analysis Date: 02/04/08 10:00		
Client ID: T-438	Run ID: BALANCE1_080204A				SeqNo: 1319859		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	12	2.0	0	0	0	0-0	12	0	20	

The following samples were analyzed in this batch: 0802026-01E

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59528** Instrument ID **UV-2450** Method: **E335.3**

MBLK	Sample ID: WBLKW1-020408				Units: mg/L			Analysis Date: 02/04/08 8:00		
Client ID:	Run ID: UV-2450_080204A				SeqNo: 1319868		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020								

LCS	Sample ID: WLCSW1-020408				Units: mg/L			Analysis Date: 02/04/08 8:00		
Client ID:	Run ID: UV-2450_080204A				SeqNo: 1319869		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.192	0.020	0.2	0	96	80-120	0			

MS	Sample ID: 0802027-01BMS				Units: mg/L			Analysis Date: 02/04/08 8:00		
Client ID:	Run ID: UV-2450_080204A				SeqNo: 1319873		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.193	0.020	0.2	0.001	96	80-120	0			

DUP	Sample ID: 0802027-01BDUP				Units: mg/L			Analysis Date: 02/04/08 8:00		
Client ID:	Run ID: UV-2450_080204A				SeqNo: 1319872		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	0.001	0	20	

The following samples were analyzed in this batch:

0802026-01B

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59546** Instrument ID **WetChem** Method: **E310.1**

MBLK Sample ID: **WBLKW1-020408** Units: **mg/L** Analysis Date: **02/04/08 20:00**

Client ID: Run ID: **WETCHEM_080204I** SeqNo: **1320147** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0								
Alkalinity, Carbonate (As CaCO3)	ND	5.0								
Alkalinity, Hydroxide (As CaCO3)	ND	5.0								
Alkalinity, Total (As CaCO3)	ND	5.0								

LCS Sample ID: **WLC SW1-020408** Units: **mg/L** Analysis Date: **02/04/08 20:00**

Client ID: Run ID: **WETCHEM_080204I** SeqNo: **1320148** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	988.3	5.0	1000	0	98.8	80-120	0			
Alkalinity, Total (As CaCO3)	988.3	5.0	1000	0	98.8	80-120	0			

DUP Sample ID: **0802026-01EDUP** Units: **mg/L** Analysis Date: **02/04/08 20:00**

Client ID: **T-438** Run ID: **WETCHEM_080204I** SeqNo: **1320151** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	206.9	5.0	0	0	0	0-0	200.8	3.03	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	206.9	5.0	0	0	0	0-0	200.8	3.03	20	

The following samples were analyzed in this batch:

0802026-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59549** Instrument ID **UV-2450** Method: **SM4500 NH3-**

MBLK	Sample ID: WBLKW1-020508				Units: mg/L			Analysis Date: 02/05/08 7:30		
Client ID:	Run ID: UV-2450_080205A				SeqNo: 1320221	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	ND	0.025								

LCS	Sample ID: WLCSW1-020508				Units: mg/L			Analysis Date: 02/05/08 7:30		
Client ID:	Run ID: UV-2450_080205A				SeqNo: 1320222	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.18	0.025	0.2	0	90	80-120	0			

LCSD	Sample ID: WLCSW1-020508				Units: mg/L			Analysis Date: 02/05/08 7:30		
Client ID:	Run ID: UV-2450_080205A				SeqNo: 1320247	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.182	0.025	0.2	0	91	80-120	0.18	1.1	20	

MS	Sample ID: 0802027-01CMS				Units: mg/L			Analysis Date: 02/05/08 7:30		
Client ID:	Run ID: UV-2450_080205A				SeqNo: 1320244	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.333	0.025	0.2	0.111	111	80-120	0			

DUP	Sample ID: 0802027-01CDUP				Units: mg/L			Analysis Date: 02/05/08 7:30		
Client ID:	Run ID: UV-2450_080205A				SeqNo: 1320241	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.112	0.025	0	0	0	0-0	0.111	0.897	20	

The following samples were analyzed in this batch:

0802026-01C

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: R59551		Instrument ID UV-2450				Method: E420.1					
MBLK		Sample ID: WBLKW1-020408				Units: mg/L			Analysis Date: 02/04/08 14:30		
Client ID:		Run ID: UV-2450_080204C				SeqNo: 1320262		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Phenolics, Total Recoverable		ND	0.050								
LCS		Sample ID: WLCSW1-020408				Units: mg/L			Analysis Date: 02/04/08 14:30		
Client ID:		Run ID: UV-2450_080204C				SeqNo: 1320263		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Phenolics, Total Recoverable		0.48	0.050	0.5	0	96	80-120	0			
MS		Sample ID: 0802027-01GMS				Units: mg/L			Analysis Date: 02/04/08 14:30		
Client ID:		Run ID: UV-2450_080204C				SeqNo: 1320271		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Phenolics, Total Recoverable		0.442	0.050	0.5	0.022	84	80-120	0			
DUP		Sample ID: 0802027-01GDUP				Units: mg/L			Analysis Date: 02/04/08 14:30		
Client ID:		Run ID: UV-2450_080204C				SeqNo: 1320269		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Phenolics, Total Recoverable		ND	0.050	0	0	0	0-0	0.022	0	20	
The following samples were analyzed in this batch:				0802026-01G							

CLIENT: Navajo Refining Company
 Work Order: 0802026
 Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59572** Instrument ID **Balance1** Method: **E160.1** (Dissolve)

MBLK Sample ID: **BLANK** Units: **mg/L** Analysis Date: **02/04/08 11:00**

Client ID: Run ID: **BALANCE1_080204C** SeqNo: **1320713** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	ND	10								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **02/04/08 11:00**

Client ID: Run ID: **BALANCE1_080204C** SeqNo: **1320714** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	989	10	1000	0	98.9	85-115	0			

DUP Sample ID: **0802026-01EDUP** Units: **mg/L** Analysis Date: **02/04/08 11:00**

Client ID: **T-438** Run ID: **BALANCE1_080204C** SeqNo: **1320711** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filt	910	10	0	0	0	0-0	902	0.883	20	

The following samples were analyzed in this batch:

0802026-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0802026
Project: RO Reject Annual

QC BATCH REPORT

Batch ID: **R59709** Instrument ID **WetChem** Method: **E405.1**

MBLK Sample ID: **WBLKW1-020308** Units: **mg/L** Analysis Date: **02/03/08 8:30**

Client ID: Run ID: **WETCHEM_080203A** SeqNo: **1323821** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	ND	2.0								

LCS Sample ID: **WLC SW1-020308** Units: **mg/L** Analysis Date: **02/03/08 8:30**

Client ID: Run ID: **WETCHEM_080203A** SeqNo: **1323822** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	201.8	2.0	198	0	102	85-115	0			

DUP Sample ID: **0802027-01FDUP** Units: **mg/L** Analysis Date: **02/03/08 8:30**

Client ID: Run ID: **WETCHEM_080203A** SeqNo: **1323826** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	ND	2.0	0	0	0	0-0	1.64	0	20	

The following samples were analyzed in this batch:

0802026-01F

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

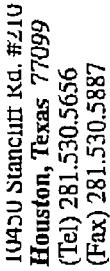
R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range



3324 148TH AVENUE
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185



Page 1 of 2

ЗАДАНИЕ. ЦИТАТИ. ИТНО

Parameter/Method Request for Analysis

Work Order #:

[illegible]

1. Any changes must be made in writing once samples and COC Form have been submitted to e-Lab Analytical, Inc.

2. That the software licensed is a General Purpose Software and that the Licensee shall not use the software for any other purpose than the one mentioned above.

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Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

3332 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

Customer Information				Project Information				Parameter/Method Request for Analysis																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Sample Receipt Checklist

Client Name: NAVAJO REFININGDate/Time Received: 2/2/2008 8:25:00 AMWork Order Number 0802026Received by: RSZ

Checklist completed by

Signature

2-2-08
Date

Reviewed by

Initials

2/4/08
DateMatrix: WCarrier name: FedEx

Shipping container/cooler in good condition?

Yes ☒No ☐Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒No ☐Not Present ☐

Custody seals intact on sample bottles?

Yes ☐No ☐Not Present ☒

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):

2.5c002

Cooler(s)/Kit(s):

1314

Water - VOA vials have zero headspace?

Yes ☒No ☐

No VOA vials submitted

Water - pH acceptable upon receipt?

Yes ☒No ☐N/A ☐

Adjusted?

Checked by

Login Notes:

Trip blank not on COC--logged in without analysis.

Client contacted:

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

NAVAJO REFINING COMPANY
501 E. MAIN STREET

System#: 185697/CAFE2331

ARTESIA, NM 88210
UNITED STATES US

SAMPLE RECEIVING

(281) 530-6656

ELAB

10450 STANCLIFF SUITE 210

HOUSTON, TX 77099

(US)

FedEx
Express



TRK# 9391 8021 1144

1314

PRIORITY SATURDAY



10450 STANCLIFF SUITE 210

PLACE THIS LABEL ON PACKAGE
NEXT TO THE SHIPPING LABEL

NAVAJO REFINING COMPANY
501 E. MAIN STREET

System#: 185697/CAFE2331

ARTESIA, NM 88210
UNITED STATES US

TO SAMPLE RECEIVING

(281) 530-6656

ELAB

10450 STANCLIFF SUITE 210

HOUSTON, TX 77099

(US)

FedEx
Express



TRK# 9391 8021 1122

1527

PRIORITY SATURDAY



10450 STANCLIFF SUITE 210

PLACE THIS LABEL ON PACKAGE
NEXT TO THE SHIPPING LABEL

Part # 156140-434 NAIT 9-05



ALS e-Lab Analytical

10450 Stancliff Rd., Suite 210

Houston, Texas 77099

Tel. 281.530.5656

Fax. 218.530.5887

Date: 11/18

Name: A

Company:

CUSTODY SEAL

11/18 Time: 1615
Aron Strange
Navajo

Seal Broken By:

Date:

11/18



ALS e-Lab Analytical

10450 Stancliff Rd., Suite 210

Houston, Texas 77099

Tel. 281.530.5656

Fax. 218.530.5887

Date:

Name:

Company:

CUSTODY SEAL

11/18 Time: 1615
Aron Strange
Navajo

Seal Broken By:

Date:

11/18



Envirodyne Laboratories, Inc.

11011 Brooklet Drive Suite 230
Houston, Texas 77099

Phone: 281-568-7880

Fax: 281-568-8004

www.envirodyne.com

Certificate of Analysis

Client Sample ID: 0802026-01L(T-438)

Collection Date: 02/01/2008 15:00

Lab Sample ID: AB29034

Collected by: PN

Analyses	Result	Units	RL	Qual	MCL	Method	Date Analyzed	Analyst
MICRO								
E. coli	<2	CFUs/100 ml	1	H		m-ColiBlue 24	02/05/2008 14:15	AB
Fecal Coliform	<2	CFU'S/100 mL	1	H		SM 9222 D	02/05/2008 14:15	AB

Qualifiers: ND - Not Detected at the Reporting Limit

L - Analyzed by third party laboratory

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

E - Result above quantitation range

H - Hold time exceeded



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Certificate of Analysis

Client Sample ID: 0802026-01M(T438)

Collection Date: 02/01/2008 15:00

Lab Sample ID: AB29035

Collected by: PN

Analyses	Result	Units	RL	Qual	MCL	Method	Date Analyzed	Analyst
MICRO								
E. coli	<10	CFUs/100 ml	1	H		m-ColiBlue 24	02/05/2008 14:15	AB
Fecal Coliform	<10	CFU'S/100 mL	1	H		SM 9222 D	02/05/2008 14:15	AB

allifiers: ND - Not Detected at the Reporting Limit

L - Analyzed by third party laboratory

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

E - Result above quantitation range

H - Hold time exceeded

QA/QC Report for Sample AB29034

Envirodyne Laboratories, Inc.

User: SMITH, MONICA

Date: 02/08/2008 Time: 08:57:53

Batch: ECOLI-47588
Unspiked

QA Sample: AB29034
<10 CFUs/100 ml

ECOLI - E. coli

Batch: FCOLIFRM-47586

Unspiked

Duplicate

Lab Control

Precision

QA Sample: AB29090
329 CFU'S/100 mL

186

>20000

55.534

FCOLIFRM - Fecal Coliform

QA/QC Report for Sample AB29035

Envirodyne Laboratories, Inc.
User: SMITH, MONICA
Date: 02/08/2008 Time: 08:57:58

Batch: ECOLI-47588	QA Sample: AB29034	ECOLI - E. coli
Unspiked	<10 CFUs/100 ml	
Batch: FCOLIFRM-47586	QA Sample: AB29090	FCOLIFRM - Fecal Coliform
Unspiked	329 CFU'S/100 mL	
Duplicate	186	
Lab Control	>20000	
Precision	55.534	

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 24, 2008 10:01 AM
To: 'Moore, Darrell'; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV
Subject: RE: Discharge Plan and New Pitch Rack Requirement for Secondary Containment

Darrell:

Based on our telephone call on Tuesday, January 22, 2008, and the information provided during the phone call, information briefly summarized below; and the provisions of the MSDS for "Petroleum Pitch," we agree that it is to be handled accordingly. For example, releases at the "Pitch Rack" shall be reported to the OCD in accordance with Rule 116. The waste is to be stored and disposed, recycled and/or reused appropriately. Navajo is aware that there may also be certain Federal reporting obligations associated with a release of this waste product. In addition, since Navajo Refining will work to remove spilled petroleum pitch from the pitch rack on a daily basis. The OCD is not requiring Navajo to install secondary containment, etc. at the pitch rack.

Please contact me if you have questions. Thank you.

Please be advised that NMOCD approval of this pitch rack does not relieve Navajo Refining of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Navajo Refining of responsibility for compliance with any other federal, state, or local laws and/or regulations.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oecd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Thursday, January 24, 2008 9:39 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV
Subject: Pitch Rack

Carl

As we discussed on the phone, what we call pitch is a lower grade of asphalt. With the price of gasoline so high, refiners are doing everything they can to make more gasoline. To that end, Navajo uses a ROSE Unit. The ROSE Unit takes asphalt and removes light ends (the things that can make gasoline) and we take those light ends to our Gas Oil hydrotreater to make gasoline. What is left from this asphalt feed stock in the ROSE Unit is what we call pitch. This pitch is then stored in heated tanks until it is loaded onto trucks. These trucks will then transport it to an asphalt facility (in our case...Koch Asphalt) to be mixed with asphalt for road building material.

What we discussed on the phone is basically, why do we need a cement pad and secondary containment for material (PITCH) that is used to build roads? Our pitch loading area that I sent you the drawings for, will be a loading arm from tankage, with a pump to move the Pitch. Any spills that occur will be allowed to harden (this usually takes a few hours to a day) and then picked up and disposed at CRI in their landfill. We know from past experience and TCLP testing that any spills will be non-hazardous. Once you let this material cool down, you can literally pick it up by hand. Historically, spills are very small with this material. Where you have the potential to get

1/24/2008

large spills is if the truck you are loading into has ANY water in it, the hot PITCH will react with that water and "burp" over the top manway on the truck. But again, the typical response is to let it cool down, harden, and then pick it up.

Any spills will be removed within 24 hours. From a business standpoint, you wouldn't want trucks driving thru a spill, so quick cleanup is in everyones best interest.

We are on a short timeline with this loading rack. Due to scheduling and manpower limitations, we need to start on this loading area by next Monday. We would like a ruling on this as soon as possible. I know you told me you would be out tomorrow so that leaves very little time. Obviously, we feel that a cement pad is overkill for this type of material. In fact, a cement pad with curbs and containment becomes a nightmare if you have a spill of this material because when it cools it plugs up everything. It is next to impossible to remove.

I look forward to hearing from you.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
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fax: 505.746.5451

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1/24/2008

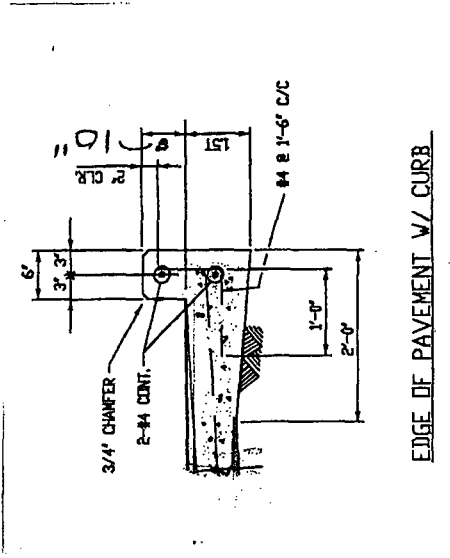
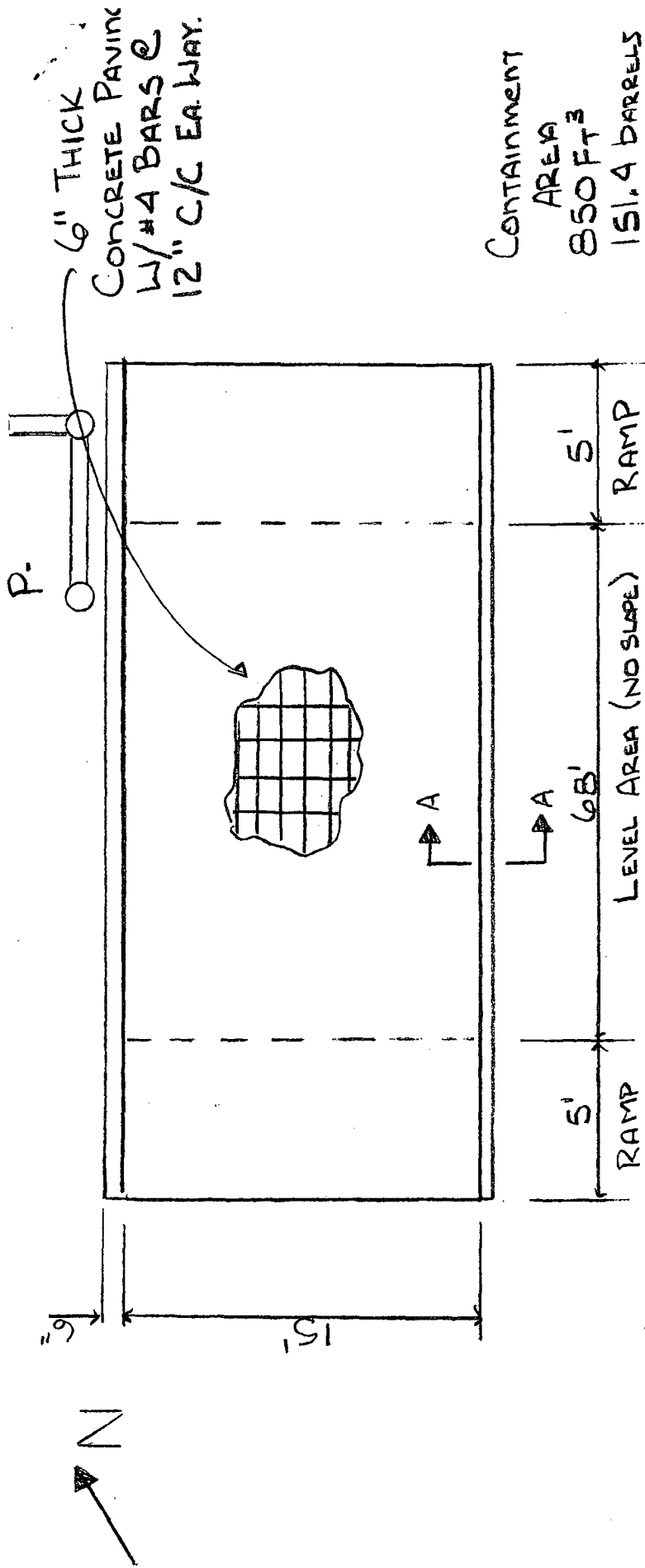
Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Monday, January 14, 2008 11:00 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV
Subject: FW: Pitch Loading Pad
Attachments: Pitch Loading Pad.pdf

Attached are the drawings and location of a new truck loading area that will be built for loading PITCH which is close to asphalt in composition. Construction will begin in the next two weeks.

From: Hernandez, Carrie
Sent: Monday, January 14, 2008 10:51 AM
To: Moore, Darrell
Subject: Pitch Loading Pad

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GUARD RAIL
(PAINT YELLOW)

DITCH LAMING DASH

SECTION A-A

EAST 5TH STREET

PROPOSED LOCATION FOR
PTCH TRUCK LOADING

423

422

420

410

409

106

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, January 02, 2008 11:16 AM
To: 'Moore, Darrell'; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Lackey, Johnny
Subject: RE: Navajo - tank on NCL

Darrell:

Good morning. I recommend that you pull all of your modifications and changes made at the facility together that have not been reported to the OCD and send them to the OCD in hardcopy as amendments to your most recent discharge plan application. You may recall that your most recent discharge plan renewal application was essentially submitted as a single form without any changes reported. There appear to have been significant modifications to the current discharge plan that have not been reported to the OCD.

Since I have prioritized the Navajo Artesia discharge plan renewal application on my work plan schedule, I recommend that you submit all of the amendments with a copy of your most recent discharge plan renewal application, and a revised form denoting all of the new changes. I want to avoid having to issue a major modification(s) to Navajo's discharge plan in the near future. Your assistance in this matter would be greatly appreciated. You may also include the free-product recovery system design at KWB-8 and nearby recovery trench schematics with a proposed monitoring (free-product volumes (monthly and cumulative) schedule. 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) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
 (Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Wednesday, January 02, 2008 10:35 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Lackey, Johnny
Subject: RE: Navajo - tank on NCL

This tank was placed into service in October 2005. We have not built any other tanks. However, we are finalizing drawings for a new tank to be built north of TK 850 and that tank will have a liner under the tank that is tied into the berm. I will get you those drawings as they are available.

From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Friday, December 21, 2007 8:11 AM
To: Moore, Darrell; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: Navajo - tank on NCL

Darrell:

Please provide the OCD with the date that the tank in question was placed into service. Also, any other tanks that were recently placed into service that the OCD is or was not aware notified or contacted about. Thank you.

1/2/2008

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Thursday, December 20, 2007 3:17 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: Navajo - tank on NCL

Carl

As I mentioned in the earlier e mail...the tank has ALREADY been built.

From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Thursday, December 20, 2007 3:00 PM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD; Moore, Darrell
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: Navajo - tank on NCL

Darrell:

The OCD and NMED have reviewed your drawings for the NCL and the OCD does not see any liner exhibited in the diagrams. The OCD requires that the liner you mentioned under the tank be tied into a liner in the bermed area.

We need to see drawings that display the liner, liner type and mil thickness. The OCD was not aware of this modification to the facility until the other day. Please provide the NMED and OCD with a diagram(s) that displays the liner system to be installed with the tank. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Thursday, December 20, 2007 9:38 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: Navajo - tank on NCL

Carl

I have attached an email from Darrell that describes the Tank on the NCL. The two PDF files also came with the

1/2/2008

email that are two drawings of the tank. Let me know if you have any other questions.

Happy Holidays

Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 476-6045; Main No.: (505)-476-6000
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hope.monzeglio@state.nm.us

Websites:

New Mexico Environment Department
Hazardous Waste Bureau

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1/2/2008

Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Thursday, December 20, 2007 9:38 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: Navajo - tank on NCL
Attachments: Tank Drawings.htm; 0227_001 (2).pdf; T815 Certified Foundation.pdf

Carl

I have attached an email from Darrell that describes the Tank on the NCL. The two PDF files also came with the email that are two drawings of the tank. Let me know if you have any other questions.

Happy Holidays

Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
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Phone: (505) 476-6045; Main No.: (505)-476-6000
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hope.monzeglio@state.nm.us

Websites:
New Mexico Environment Department
Hazardous Waste Bureau

12/20/2007

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Tuesday, December 11, 2007 9:44 AM
To: Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Cc: Hall, Sharon; Lackey, Johnny
Subject: Tank Drawings

Attachments: 0227_001 (2).pdf; T815 Certified Foundation.pdf
Hope and Dave

Here are the drawings you should have received on the tank at the NCL. In the first drawing above (Certified Foundation), are the details of how the foundation was built. These are found on the lower right side of the drawing with extensive detail as to depth of excavation, liner location, fill material specifics, ring wall, etc. As the drawing shows, the ring wall of the tank is 116'8" in diameter. When the tank was built, the material in the NCL was removed in a 127' diameter (The ring wall plus 5') to a depth of 5'. So we had a round hole, 127' in diameter and 5' deep. Some of this material was then used to start the berm around the tank. We then brought in engineered fill to fill the hole. This material was compacted to make the foundation for the tank. The tank was then built on this foundation. We then used part of the excavated material to produce a 1.5 degree slope away from the tank for 30' in all directions. As for the berm, as I said earlier, the material that was dug out to build the foundation was used to start the berm (except for the material that was used to build the slope away from the tank). Additional fill was brought in from outside to complete the berm. The other material inside the berm (meaning the material NOT under the tank) was and is undisturbed. I can get exact numbers for the amount of material excavated to build the foundation for the tank but it was approximately 2300 cu.yds. There was approximately another 1200 cu yds of clean fill brought in to finish the berm and drive over. Those numbers are rough but I can get pretty accurate numbers if you need them.

Im certainly not an expert on drawings, but these drawings seem to show what you were asking for. We have other drawings on this tank that show specifics for welding, roof, stairway, etc. but I didn't think that was what you were looking for.

If you need more information, let me know.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, December 18, 2007 7:49 AM
To: 'Moore, Darrell'
Cc: Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD; Bratcher, Mike, EMNRD
Subject: FW: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

Darrell:

Good morning. Please provide a work plan to the OCD and NMED for the free product recovery system (intrinsically safe) at KWB-8 within the next 30 days. There is some concern about the pump in the recovery trench west of KWB-8 where free product will be routed. Will this pump also need to be intrinsically safe to receive and pump free-product without and explosion/fire hazard?

Please contact me if you have questions. 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
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E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Monday, December 10, 2007 4:25 PM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

Carl

Navajo is supposed to update their groundwater monitoring plan every year. We will make sure the recovery system is added to the monitoring work plan upon implementation.

Hope

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 05, 2007 4:25 PM
To: Monzeglio, Hope, NMENV
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD; Bratcher, Mike, EMNRD; 'Moore, Darrell'
Subject: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

Hope:

Re: OCD Feb. 19, 2007 Refinery Inspection

FYI. As a follow-up from the OCD's last inspection, I spoke with Mr. Darrell Moore (Artesia Refinery) yesterday

12/18/2007

and he said that KWB-8 had shown little free-product (couple of inches) in the past until more recent quarterly bailing where they have bailed from 25 to 30 gallons of free-product from the well during quarterly bailing events. Consequently, he agrees that a continuous free-product removal system would be more efficient than continuing to bail the well on a quarterly basis. He knows of a intrinsically safe (fire/explosion proof) free-product recovery system that could be installed in the well that would continue to purge free-product down to a thickness of ¼ inch before stopping. It reactivates above ¼ inch. He is aware of the nearby recovery trench west of KWB-8 that free-product could be routed to for transport back to the refinery for reclamation and treatment via the existing treatment system.

Since I had discussed this previously with the NMED, I requested that he submit a work plan to the NMED and OCD with information on the free-product recovery system and specifications (i.e., purge rate, power source, safety, schematic or diagram illustrating how free-product system connection to nearby recovery trench, etc.). In addition, a time table for installation for the agencies to approve?

A few thoughts that I have are monitoring and recording of the volume of free-product removed for mass-balance purposes? Do we amend monitoring to include the new free-product system and inclusion in the annual report, etc.? Is there anything else that Darrell needs to consider for the work plan? Please let us know if you have any thoughts about this. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
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Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")



BILL RICHARDSON
Governor

DIANE DENISH
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



RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 12, 2007

Darrell Moore
Navajo Refining Company
501 East Main Street, P.O. Drawer 159
Artesia, New Mexico 88210

**RE: APPROVAL
NORTH COLONY LANDFARM (NCL) SOIL SAMPLING WORK PLAN
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID No. NMD048918817
HWB-NRC-07-006**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of Navajo Refining Company, Artesia Refinery's (Permittee) revised *North Colony Landfarm (NCL) Soil Sampling Work Plan* (Work Plan) dated December 6, 2007. The Permittee did not provide all information required by the November 21, 2007 NOD in the revised work plan and did not provide detailed information pertaining to the tank installation and piping (e.g., Figure 2 of the hard copy of the Work Plan does not show the locations of the tank and associated piping). Therefore, NMED reserves the right to request additional sampling, if necessary. In addition, a typographical error is found in the last sentence in Section 5.2 (Selection of Sample Locations) which references Section 4.4, this should reference Section 4.5.

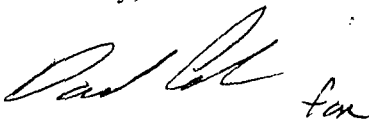
In order to expedite the sampling process, NMED hereby approves this Work Plan. The Permittee must adhere to the Post Closure Care Permit Section 3.2.3.d.

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 2 of 2

Sampling at the NCL must be completed by December 31, 2007. A detailed Status Report must be submitted summarizing all sampling activities, analytical results, findings, and any activities which deviated from the approved Work Plan to NMED on or before February 29, 2008.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kielling", followed by a small, stylized mark that looks like "fm".

John E. Kielling
Program Manager
Hazardous Waste Bureau

cc: J. Kielling, NMED HWB
D. Cobrain, NMED HWB
C. Frischkorn, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
J. Lackey, NRC
S. Hall, Arcadis
File: Reading File and NRC 2007
HWB-NRC-07-006



BILL RICHARDSON
Governor

DIANE DENISH
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



RON CURRY
Secretary

CINDY PADILLA
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 12, 2007

Darrell Moore
Navajo Refining Company
501 East Main Street, P.O. Drawer 159
Artesia, New Mexico 88210

**RE: SECOND NOTICE OF DEFICIENCY TO THE
2006 ANNUAL GROUNDWATER REPORT
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID No. NMD048918817
HWB-NRC-07-002**

RECEIVED
2007 DEC 14 PM 1 32

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of Navajo Refining Company, Artesia Refinery's (Permittee) revised *2006 Annual Groundwater Report Volume 2* (Volume 2 Report), dated October 2007. The Permittee has not adequately addressed the comments presented in NMED's original August 31, 2007 Notice of Deficiency (NOD). NMED hereby issues this second NOD. The comments in this letter relate to the Permittee's October 4, 2007 response letter. Additional comments are included at the end of this letter. NMED's comments to Volume 2 of the Report are addressed below. The Permittee must submit a revised report addressing all of the following comments.

Comment 1/Response 1 (three parts)

- a. The Permittee states that the Executive Summary was revised to indicate the correct approval date for the *Groundwater Monitoring Work Plan*. No change was made, the sentence still states March 2007. The Permittee must revise the sentence to state the correct approval date for the *Groundwater Monitoring Work Plan*. See original comment 1 from the August 31, 2007 NOD.

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 2 of 8

- b. In the response letter to Comment 1, the Permittee explained why certain wells were not sampled during the groundwater monitoring event in the response. The Permittee must revise the Volume 2 Report to include the explanations.
- c. The Permittee must ensure sampling is conducted in the fall (late September/October, but no later than November 15) and spring (March but no later than April 30) in accordance with the *Groundwater Monitoring Plan*. No response necessary.

Comment 2/Response 2

The Permittee's response states "[t]he comment that 'no other wells down gradient of Bolton Road...' has been removed, and the previous sentence was revised to read '[t]hree recovery trenches on Bolton Road (RW-11, RW-13, and RW-14) continue to catch and remove a thin hydrocarbon plume.' The above sentence was not revised in the Volume 2 Report. Rather it states "[t]wo recovery trenches on Bolton Road (RW-13, and RW-14), and a series of recovery wells (RW-11 thru RW-11-9), continue to catch and remove a thin hydrocarbon plume."

No revision is necessary as an appropriate change was made. However, the response the Permittee stated to be in the Volume 2 Report was in fact not there. The Permittee must ensure that stated responses are actually incorporated into Report revisions. This applies as well to all future revised reports. This was a regular occurrence throughout the Volume 2 Report, and is wholly unacceptable.

Comment 3/Response 3

The Permittee's response states "[t]he text was revised to accurately reflect the tests actually performed on the groundwater as shown in appendix B." There is no "appendix B," in the Volume 2 Report. The Permittee must revise and clarify the above statement.

The Permittee also revised the text in Section 1.1, Bullet 2 which states that "[t]he wells to the north and east of the separator to be analyzed for RCRA metals, but all samples were analyzed." The sentence is nonsensical. The Permittee must revise and clarify this sentence. Sampling requirements are not different around the "separator." Further it is not clear which API separator is being referenced in this bullet item.

Comment 4/Response 4

The Permittee's response states that "[t]he text was updated to reflect the tests actually performed, and now references the Groundwater Plan, Table 1 as specified by the NOD." The Permittee did not respond to the "Regulatory Criteria" portion of Comment 4. The Permittee

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 3 of 8

must revise the Volume 2 Report as follows:

- a. Section 1.2 "Regulatory Criteria" (e.g., Water Quality Control Commission (WQCC) Standards) does not apply to analytical methods (e.g., Volatile Organic Compounds using EPA Method 8260) as stated in the Volume 2 Report. Regulatory Criteria refers to clean up standards that are proposed for comparison to groundwater chemical analytical results. As stated in the August 31, 2007 NOD, this must include the WQCC standards, the maximum contaminant levels (MCLs), and EPA Region 6 Human Health Medium-Specific Tap Water Screening Levels as required in Permit Section 4.6.1.b.
- b. The chemical analyses for groundwater samples collected during the groundwater sampling events must be addressed in the "Chemical Analytical Data" Section (see Appendix E.4 of the Post-Closure Care Permit). This section may reference Table 1 of the *Groundwater Monitoring Work Plan*. It should not be included in Section 1.2 Regulatory Criteria.

Comment 5/Response 5

The Permittee's response states "[t]he word Appendices was changed to Attachments, they are referenced in the Table of Contents. Table 3-1 was updated to include all detections." See Comment A below regarding Table 3-1.

Section 1.2 (Regulatory Criteria), page 2 makes reference to Appendix D. The Permittee must revise the Volume 2 Report to address the correct attachment.

Comment 7/Response 7

The Permittee's response states that "[t]he text and tables have been revised to clarify the fluids extraction performance for RW-4 and RW-5."

No changes were made in the Volume 2 Report. The text in Section 2.0 and Table 2-1 show the exact information as stated in *Volume 1 2006 Annual Groundwater Report*. The Permittee must revise the report to make the appropriate changes to address Comment 7.

Comment 8/Response 8

The Permittee has partially responded to Comment 8, with the following exceptions:

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 4 of 8

- a. The Permittee did not revise the text to identify which of the five recovery wells contained separate phase hydrocarbons (SPH) as required by Comment 8 of the August 31, 2007 NOD. The Permittee must revise the Volume 2 Report to identify which of the five recovery wells contained SPH.
- b. The Permittee's response states that "[t]he figures have been updated with the phrase RW-11-series." NMED notes that the Figures do not have the phrase "RW-11 series" but just state "RW-11". No change is necessary to the figures since RW-11 is now identified. See Comment 2.
- c. The Permittee must include the well log for RW-11-9 with the revised report submittal.

Comment 9/Response 9

The Permittee must revise Table 3-1 to define the meaning of the asterisk and "NMED" found in the third and fourth row of the table in the footnotes.

Comment 10a/Response 10a

The footnote "¹ Semi-annually sampled and only for benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tertiary-butyl ether (MTBE)" is still present in Table 3-1. The Permittee responded by stating that "[t]he tables have been revised to reflect the appropriate footnotes as requested." The Permittee must revise Table 3-1 to either remove this footnote or provide an explanation as to why it applies and should stay in the table.

Comment 10c/Response c

The footnote "GWStd= Groundwater standard; maximum allowable concentration in groundwater from NMAC 20.6.2.3103 (used when WQCC and EPA levels have not been established)" was not revised on Table 6-1 and 7-1. The Permittee must revise this footnote found in the Tables to reference the correct regulatory criteria. (See Comment 10c)

Comment 10d/Response 10d

The Permittee has revised the tables to include the correct regulatory criteria which include "MCL, EPA, WQCC, NMED." The Permittee must revise all tables throughout the report to define these abbreviations in the footnotes. Further, the Permittee must clarify what the header "NMED" references.

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 5 of 8

Comment 11/Response 11

The data presented in the revised Tables 3-2 and 3-3 are presented in a small font, making the tables difficult to read. The Permittee must revise Tables 3-2 and 3-3 to be clearly legible.

Comment 11a/Response 11a

RW-18 in the "Groundwater Elevations" column of Tables 3-2 indicates a negative number. The negative number must be corrected in the revised report or an explanation must be provided to explain the negative number.

Comment 11d/Response 11d

Well KWB-13 was added to Table 3-2 but the field parameter measurements were not presented. KWB-13 was not included in Table 3-3. The Permittee must revise Table 3-2 to include the field water quality measurements for KWB-13 as stated in the response to 11d and add KWB-13 and the associated data to Table 3-3.

The Permittee must identify when NP-7 was permanently damaged and became inaccessible. If groundwater sampling cannot be completed per the *Groundwater Monitoring Work Plan*, Table 1, Navajo must inform NMED and the Oil Conservation Division (OCD) within one week of a well being damaged. In addition, the Permittee must demonstrate compliance with the *Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells* 19.27.4.30 NMAC.

As stated in the response, in the future the Permittee will provide water quality parameters for the irrigation wells. It is still not clear to NMED why these data were not collected when the wells were sampled, since it is a requirement in Table 1, of the *Groundwater Monitoring Plan*. Water quality measurements obtained from the irrigation wells therefore, must be included in the upcoming annual groundwater monitoring report. The Permittee must provide an explanation as to why water quality measurements were not collected at the time the wells were being sampled.

Comment 11e/Response 11e

In Comment 11e of its August 31, 2007 NOD, NMED stated that "[t]he '1' footnote for the dissolved oxygen (DO¹) column is defined to mean "meter appeared to be reading improperly." The footnote leads the reader to believe that the dissolved oxygen meter was reading incorrectly for all wells. If this is correct, no revision is necessary. A revision is necessary if the meter was only reading incorrectly for some wells. If this is the case, then the table must be revised to indicate the DO values that are incorrect."

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 6 of 8

The Permittee responded stating “[t]he DO was marked as suspect on the wells that read negative numbers, this is consistent with our response in 2005. The numbers were marked with an asterisk.”

The Permittee’s response does not address NMED’s original comment. The “DO” column does not display any negative numbers nor are there any asterisks. NMED’s 2005 Comment is not related to comment 11e. The Permittee must respond to NMED’s original comment.

Comment 11f/Response 11f

In Comment 11f of its August 31, 2007 NOD, NMED stated that “[t]he data provided in the row associated with KWB-4 in Table 3-2 denotes a “NM” (meaning “not measured; pump in well”) and no product measured. KWB-4 in Table 3-3 no longer has the footnote “NM” and the “Thickness of Product” column contains a measurement of 7.19 feet of product in the well. The Permittee must identify whether the pump was removed from the well during this sampling event and, if so, why the pump was used for one sampling event and not the other. The Permittee must also clarify if product has been recovered from the well.”

The Permittee’s response states “[k]WB-4 has not had a pump in it, so product is not continually pumped from the well. Champion, a general contractor for NAVAJO, hand-bails product.”

The Permittee did not identify why the pump was used for one sampling event and not the other; this must still be addressed. In addition, if KWB-4 does not have a pump in it, then it should not have the notation “NM = Not measured; pump in well” as stated in Table 3-2; this table must be revised accordingly. The “NM” notation should only apply to wells that have pumps.

In all future groundwater monitoring events, the Permittee must always collect water level measurements in a well, unless a pump is operating. If a pump is not operating, then water level measurements must be collected. The footnote NM will likely need to be revised.

Comment 13

In Comment 13 of its August 31, 2007 NOD, NMED stated that “[t]he Permittee states in Section 4.0 (Monitoring Results and Chemical Analytical Data –NCL/TEL) on page 15, paragraph 3, “TEL-3 has been eliminated from the work plan groundwater monitoring schedule and therefore was not sampled for 2006.”

The Permittee’s response states “TEL-3 contained 0.01-inch of product in the well, therefore no sample was collected.” TEL 3 contained 0.01 feet of product in it, not inches (see Table 3-2).

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 7 of 8

The Permittee must revise the Volume 2 Report to remove the sentence "TEL-3 has been eliminated from the work plan groundwater monitoring schedule and therefore was not sampled for 2006." The Permittee must then indicate that TEL-3 was not sampled because it had product in it.

Comment 14/Response 14

The product thickness maps are not legible. The Permittee must revise the product thickness maps to be legible. The reader must be able to read all notations and devices on the maps including but not limited to well names, legends, and product thickness levels. The Permittee must also revise the text in Section 4.0 of the Volume 2 Report to reference the product thickness Figures 4-5 and 4-6.

Comment 19/Response 19

The Permittee must submit the laboratory report(s) for KWB-10.

Comment 20/Response 20

The Permittee must revise the Volume 2 Report to discuss why certain wells were not sampled. This information must also be included in all tables within the report.

Additional comments made by NMED

Comment A

The Permittee must ensure that all tables and figures found in the Volume 2 Report are revised to be legible and that all titles and footnotes included in the associated table or figure and are not cut off or do not overlap one another. All information provided in the tables and figures should be complete and legible to the reader.

Comment B

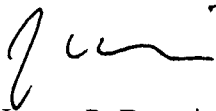
All future reports must be submitted in complete format with all tables, figures, attachments, and appendices placed in the correct locations within the report. The Volume 2 Report was submitted in a form that required NMED to collate the tables, figures, and attachments into the text of the report. The tables and figures were inconsistent with respect to color, size, formatting, and legibility. All future reports must be submitted to NMED in complete, clear, and consistent format.

Mr. Darrell Moore
Navajo Refining Company
December 12, 2007
Page 8 of 8

NMED is very concerned that many of the revisions stated in the written response did not appear in the Volume 2 Report. The Permittee must address all comments contained in this NOD and submit a second revised 2006 Annual Groundwater Report. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The Permittee is not required to resubmit the analytical data except as specified in this letter. All requirements must be addressed in future groundwater monitoring reports. The revised report must be submitted to NMED no later than January 12, 2008.

If you have questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
C. Frischkorn, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
S. Hall, Arcadis
S. Tischer, Arcadis
K. Lowrie, Arcadis
File: Reading File and NRC 2007
HWB-NRC-07-002

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Wednesday, December 12, 2007 3:48 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Lackey, Johnny; Resinger, Jim; Beardemphl, Scott; Price, Doug; Davis, Gary; Kleihege, Mike; Howes, Randy
Subject: New Unit Construction
Attachments: H2 OWS and Storm Sewer details.pdf; Hydrogen Plant OWS and Storm Sewer.pdf; OWS assembly H2.pdf; Sewer Location Mild Hydrocracker.pdf; Sewer Location Mild Hydrocracker 1 of 2.pdf; Site Plan.pdf

Carl,

As per our discharge permit, I am forwarding drawings to you and Hope of two new units that we are going to be starting construction on in the very near future. The attached figures include drawings for a new Mild Hydrocracker (MHC) and a new hydrogen unit. I have also attached a site plan with block diagrams of where the new units will be located within the refinery. We are still finalizing drawings for a new Sulphur Recovery Unit (SRU) and a new Rose Unit. Those two units are noted on the site plan so you can get an idea of where they will be located. The drawings of those two units (SRU and Rose) will be forwarded to you as soon as possible.

We have contractors mobilizing to start preparations to construct these units. Your timely review of this material will be greatly appreciated.

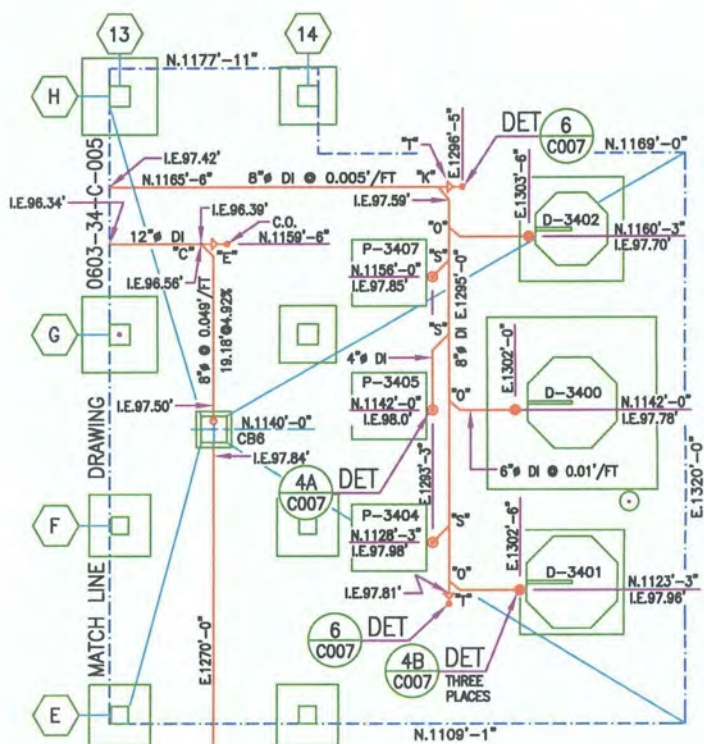
Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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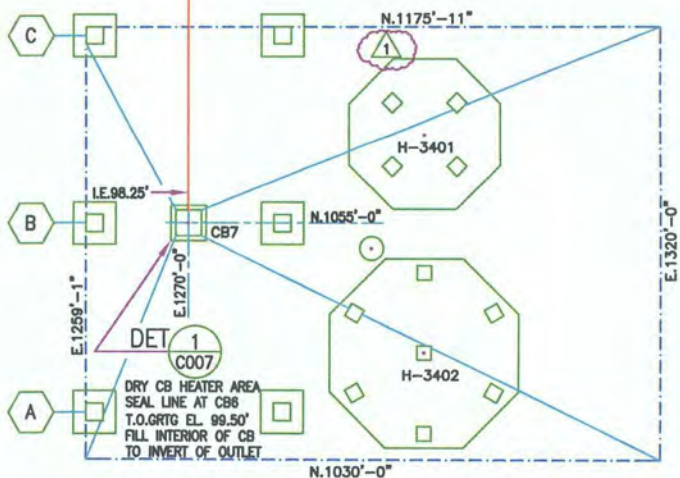
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JOB 0603 CUST. NAVAJO REFINING CO.

DATE 08/17/07 BY KSB

NO. 1 DELETED FDN PS-012-C

NO. 0 ISSUED FOR CONSTRUCTION

DRWN DAE CK'D MDH

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Thursday, December 13, 2007 7:48 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Lackey, Johnny; Resinger, Jim; Davis, Gary; Kleihege, Mike; Beardemphl, Scott; Howes, Randy; Price, Doug
Subject: SRU Drawings
Attachments: SRU UNDERGROUND LAYOUT (2).pdf

Carl and Hope

Here are additional drawings of the layout of the new Sulphur Recovery Unit. (SRU). The drawings I sent yesterday include detail drawings for the sewer boxes with secondary containment. Those are our standard drawings for sewer boxes and will also be used in this unit. If you need any more information do not hesitate to call me at 505-746-5281.

As I mentioned yesterday, we are mobilizing contractors to start construction on these units. Your timely review of this material will be greatly appreciated.

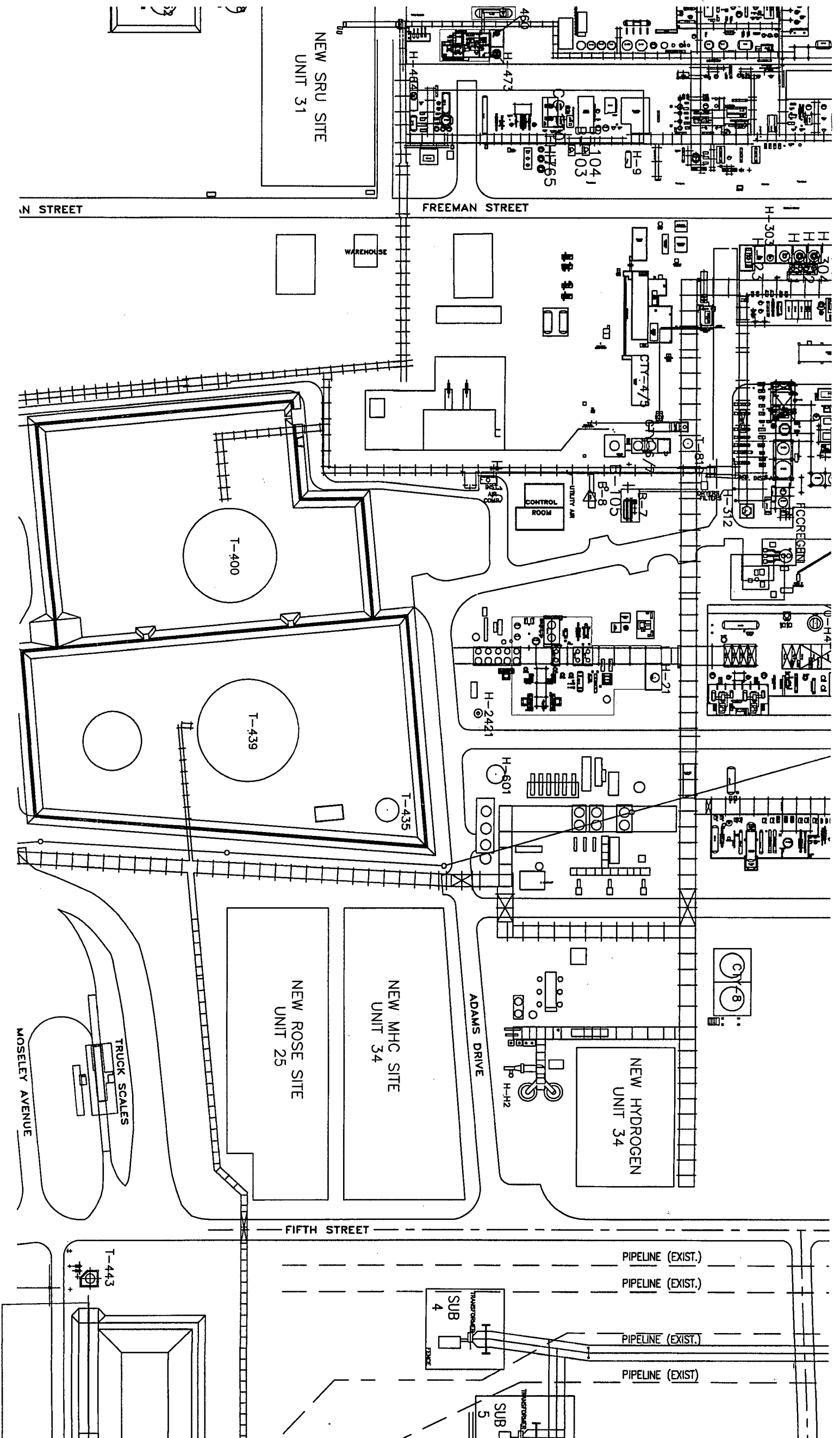
Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

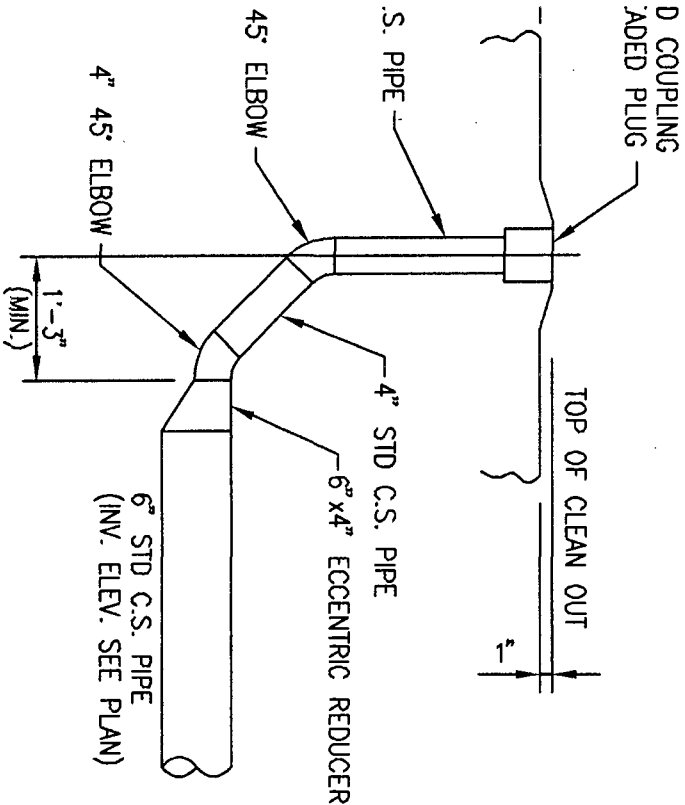
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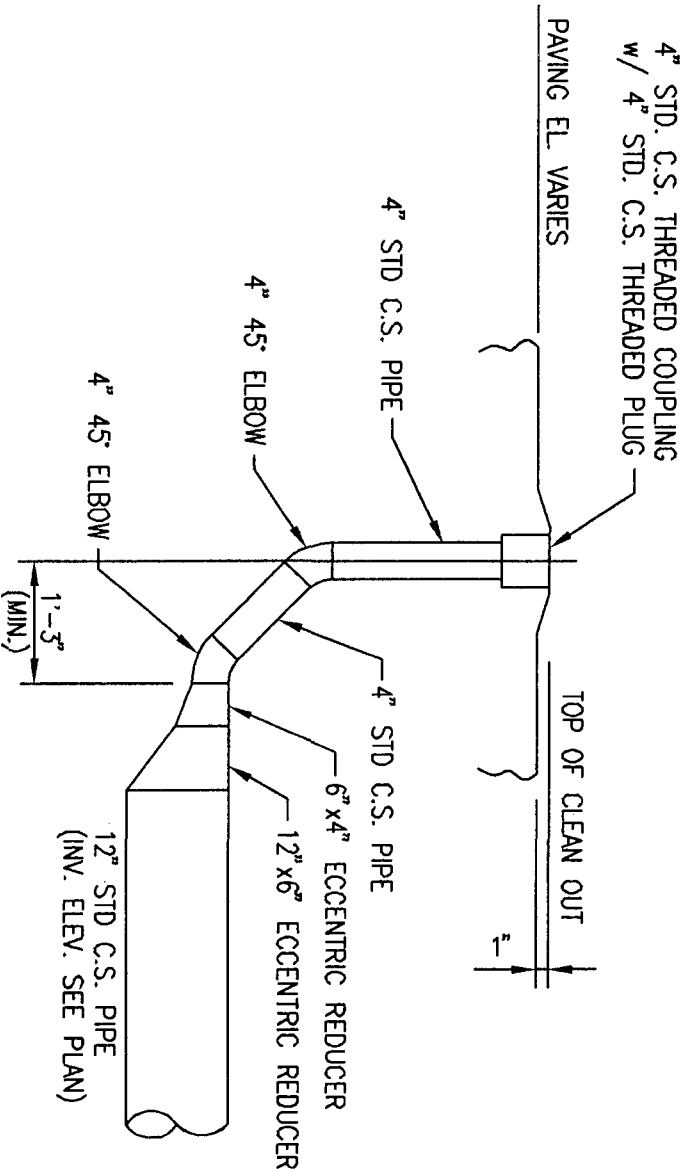
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12/17/2007

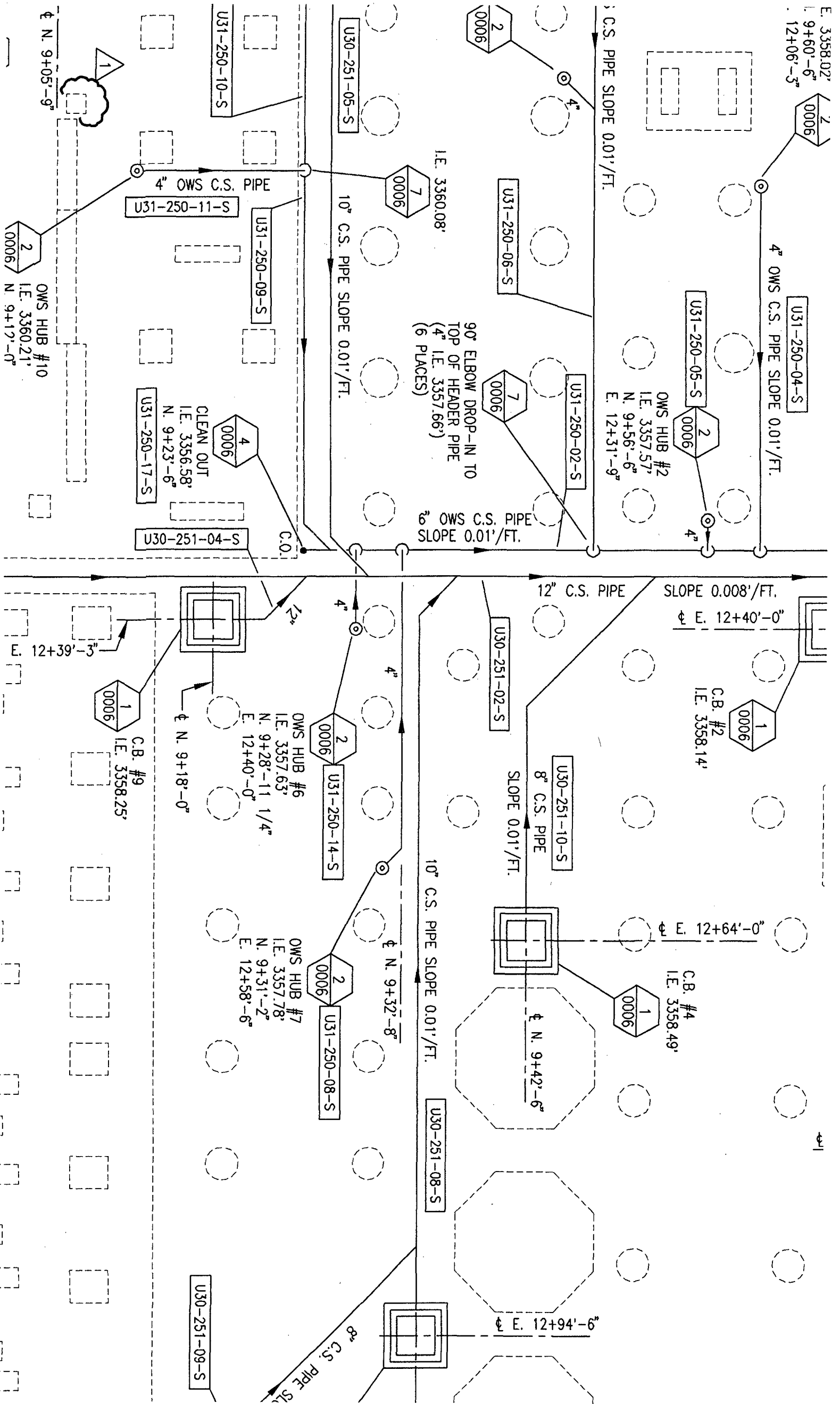




DETAIL "4"
ELEVATION - CLEAN OUT
(3 REQD.)



DETAIL "5"
ELEVATION - CLEAN OUT
(ONE REQD.)



Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Monday, December 10, 2007 4:25 PM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

Carl

Navajo is supposed to update their groundwater monitoring plan every year. We will make sure the recovery system is added to the monitoring work plan upon implementation.

Hope

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 05, 2007 4:25 PM
To: Monzeglio, Hope, NMENV
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD; Bratcher, Mike, EMNRD; 'Moore, Darrell'
Subject: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

Hope:

Re: OCD Feb. 19, 2007 Refinery Inspection

FYI. As a follow-up from the OCD's last inspection, I spoke with Mr. Darrell Moore (Artesia Refinery) yesterday and he said that KWB-8 had shown little free-product (couple of inches) in the past until more recent quarterly bailing where they have bailed from 25 to 30 gallons of free-product from the well during quarterly bailing events. Consequently, he agrees that a continuous free-product removal system would be more efficient than continuing to bail the well on a quarterly basis. He knows of a intrinsically safe (fire/explosion proof) free-product recovery system that could be installed in the well that would continue to purge free-product down to a thickness of ¼ inch before stopping. It reactivates above ¼ inch. He is aware of the nearby recovery trench west of KWB-8 that free-product could be routed to for transport back to the refinery for reclamation and treatment via the existing treatment system.

Since I had discussed this previously with the NMED, I requested that he submit a work plan to the NMED and OCD with information on the free-product recovery system and specifications (i.e., purge rate, power source, safety, schematic or diagram illustrating how free-product system connection to nearby recovery trench, etc.). In addition, a time table for installation for the agencies to approve?

A few thoughts that I have are monitoring and recording of the volume of free-product removed for mass-balance purposes? Do we amend monitoring to include the new free-product system and inclusion in the annual report, etc.? Is there anything else that Darrell needs to consider for the work plan? Please let us know if you have any thoughts about this. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oecd/index.htm>
(Pollution Prevention Guidance is under "Publications")

12/17/2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 05, 2007 4:25 PM
To: Monzeglio, Hope, NMENV
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Price, Wayne, EMNRD; Bratcher, Mike, EMNRD; 'Moore, Darrell'
Subject: GW-28: Navajo Artesia Refinery Free-Product at KWB-8

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A few thoughts that I have are monitoring and recording of the volume of free-product removed for mass-balance purposes? Do we amend monitoring to include the new free-product system and inclusion in the annual report, etc.? Is there anything else that Darrell needs to consider for the work plan? Please let us know if you have any thoughts about this. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

12/5/2007

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Wednesday, November 07, 2007 8:18 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Subject: Spill in Unit 45

Carl and Hope,

On October 28, 2007, there was a spill reported from this plant in Unit 45. Calls were made to both OCD and NMED between 10:20 and 10:30 that morning. The "spill" was gas oil that was contained on the cement pad within the unit. It was then washed into the sewer system and put thru the slop system and reintroduced back into the refinery. None of this material got to bare ground. As such, I feel a spill report should not have been made. With that in mind, I have not filled out a C-141 for this incident. This e mail is sent to tie up any loose ends concerning this event. If you have any questions, please call me or respond to this e mail.

Thanks.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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11/13/2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, October 26, 2007 2:25 PM
To: 'Moore, Darrell'; Price, Wayne, EMNRD
Cc: Lackey, Johnny
Subject: RE: 710522 TK439 Hydro

Darrell:

Water quality looks good. Approved. Thank you.

Please be advised that OCD approval does not relieve the owner/operator of responsibility should their operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Friday, October 26, 2007 12:54 PM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Lackey, Johnny
Subject: FW: 710522 TK439 Hydro

Carl and Wayne

Here are the analysis from our hydrotest water in TK 439. There are no results above the WQCC standards. We will discharge this water to our farm on the south side of Eagle Draw. There will be approximately 60,000 bbls of fresh water released. If you have questions, let me know.

Darrell Moore

From: Byrd, Jeff
Sent: Thursday, October 25, 2007 3:35 PM
To: Moore, Darrell
Subject: FW: 710522 TK439 Hydro

Jefferson L. Byrd, EI
Environmental Scientist
Off: 505-748-3311

10/26/2007

Cell 505-703-5068

From: Croston, Jeffrey [mailto:jcroston@elabi.com]
Sent: Thursday, October 25, 2007 3:28 PM
To: Byrd, Jeff
Subject: 710522 TK439 Hydro

Jeff here are the results for the job above. the final will complete when the BOD is out in a few days.
The Benzene result you ask me to check on did confirm.

Jeff

Jeffrey Croston
Project Manager
ALS e-Lab Analytical
10450 Stancliff Rd, Suite 210
Houston, TX 77099
Phone: 281-530-5656
www.elabi.com
www.alsglobal.com

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10/26/2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, October 10, 2007 2:45 PM
To: Terry, Steve
Cc: Price, Wayne, EMNRD; Lowe, Leonard, EMNRD
Subject: FW: 2007-10-10 Lovington Crude oil spill

Steve:

The OCD is planning to conduct an inspection of the Navajo Lovington Refinery on Tuesday, October 30, 2007 at around 1:30 p.m. Please contact me to discuss and finalize the date and time for the inspection.

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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Byrd, Jeff [<mailto:Jeff.Byrd@hollycorp.com>]
Sent: Wednesday, October 10, 2007 2:07 PM
To: Chavez, Carl J, EMNRD
Cc: Moore, Darrell; Price, Doug; Lackey, Johnny; Terry, Steve
Subject: FW: 2007-10-10 Lovington Crude oil spill

Carl:

Please see the information below regarding a crude oil spill we had this morning, Wednesday October 10th, at the Lovington Refinery

Jefferson L. Byrd, EI
Environmental Scientist

Off: 505-748-3311

Cell 505-703-5068

From: Price, Doug
Sent: Wednesday, October 10, 2007 1:37 PM
To: Lackey, Johnny; Resinger, Jim; Hernandez, Eloy; Terry, Steve; Swafford, Ricky
Cc: Hackmann, Kenneth; Townley, Dickie; Byrd, Jeff; Moore, Darrell; Hernandez, Carrie
Subject: 2007-10-10 Lovington Crude oil spill

At ~ 8:00 am on 2007-10-10, Steve Terry called from the Loco Hills area to let me know about a crude oil spill in Lovington. The spill occurred earlier this morning and was estimated to be about 15 to 20 bbls on the ground. They had a problem switching the inlet pipeline from one crude tank to another, crude oil spilled out of the relief valve, filled the sump, and then overflowed onto the ground. They were covering the spilled area with sand and planned to pick up the contaminated soil.

10/10/2007

At ~8:45 am, Steve arrived in Artesia and we called Eloy for an update. He confirmed that the area would have sand applied and would be cleaned up. Steve said he would contact Mike Willis (Fluid transport) and arrange for some roll-off boxes for the contaminated soil.

At ~9:05 am, I called the Lovington OCD office (505-393-6161). The recorded message said if it was an emergency to call their "on-call" number (505-370-7106). I called the "on-call" number, which is a pager system, and left a call back number.

At ~1:15 pm, I called the OCD-Lovington number again and spoke to the receptionist (Cindy). She directed my call to Larry Johnson. He was not in, so I left a voice mail message about the spill and clean-up, along with a call back number.

Thanks,
Doug

Douglas B. Price
Environmental Manager for Air Quality
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, NM 88211-0159
Doug.Price@Navajo-Refining.com
phone: 505.746.5294
cell: 505.703.5168
fax: 505.746.5451

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10/10/2007

Chavez, Carl J, EMNRD

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Sent: Wednesday, October 10, 2007 2:07 PM
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Subject: FW: 2007-10-10 Lovington Crude oil spill

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Jefferson L. Byrd, EI
Environmental Scientist

Off. 505-748-3311

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At ~8:45 am, Steve arrived in Artesia and we called Eloy for an update. He confirmed that the area would have sand applied and would be cleaned up. Steve said he would contact Mike Willis (Fluid transport) and arrange for some roll-off boxes for the contaminated soil.

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Thanks,
Doug

Douglas B. Price
Environmental Manager for Air Quality
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, NM 88211-0159
Doug.Price@Navajo-Refining.com
phone: 505.746.5294
cell: 505.703.5168
fax: 505.746.5451

10/10/2007

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10/10/2007

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report

☐ Final Report

Name of Company <i>Navajo Refinery</i>	Contact <i>Darrell Moore</i>	
Address <i>501 E Main</i>	Telephone No. <i>505-748-3311</i>	
Facility Name <i>Navajo Refining</i>	Facility Type <i>Petroleum Refinery</i>	
Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

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

NATURE OF RELEASE

Type of Release <i>Fuel Oil</i>	Volume of Release <i>160 bbls.</i>	Volume Recovered <i>80 bbls.</i>
Source of Release <i>Loading Arm</i>	Date and Hour of Occurrence <i>5:30 pm 6/10/07</i>	Date and Hour of Discovery <i>6/10/07 6:00 pm</i>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>Mike Bratcher OCD</i>	
By Whom? <i>Darrell Moore</i>	Date and Hour <i>6:20 pm 6/10/07</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* *Loading Arm valve left open.*

Describe Area Affected and Cleanup Action Taken.* *Picked up free liquids w/ vacuum truck,
Digging up contaminated soil*

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 DIVISION

Signature: <i>Darrell Moore</i>	Approved by District Supervisor:	
Printed Name: <i>Darrell Moore</i>	Approval Date:	Expiration Date:
Title: <i>Env. Mgr.</i>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <i>6/11/07</i>	Phone: <i>748-3311</i>	

* Attach Additional Sheets If Necessary

FIGURE 2.3

NOTIFICATION DATA SHEET

SPILL REPORT (SR-2)

1. Time of Spill 5:30 AM/PM (P) Date 6-10-07
2. Time Spill reported to Shift Foreman 5:30 AM/PM (P) Date 6-10-07
3. Name of person on duty at time of spill Ba Hunter
- 3.a. Name of person who discovered spill if different from above _____
4. Location of Spill West asphalt loading rack
5. Type of Spill (Material) Fuel oil
6. Quantity of Spill 160 bb. Size of Spill (area) _____
7. Time Spill Contained 6 AM/PM (P) Date 6-10-07
8. Disposition of Spilled Material Picked up w/ pumper truck
9. How was the Spill contained _____
10. Did spill get into any drainage ditch, Eagle Draw, or the Stormwater Retention basin? YES ☐ NO ☒
11. If yes, did the spill leave company property or right-of-ways?
YES ☐ NO ☐
12. Corrective action taken to prevent further spills: _____

13. Physical location of responsible person at the time of spill Office at the rack
14. Department BPL
15. Supervisor's Signature Charles Elab

- NOTE -

In order to comply with state and federal laws, the Navajo Refining Company must report spills as soon as possible. Call to report all spills as soon as possible to the refinery Environmental Department. The 24 hour phone number for the Environmental Department is (505) 365-8365. This form must be filled out completely and returned to the refinery Environmental Department whenever a spill occurs.

Form SR-2 - 4-7-95

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate
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side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report

☐ Final Report

Name of Company	Navajo Refining Co	Contact	Darrell Moore
Address	501 E Main	Telephone No.	505-748-3311
Facility Name	Navajo Refinery	Facility Type	Petroleum Refining
Surface Owner	Mineral Owner	Lease No.	

LOCATION OF RELEASE

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

NATURE OF RELEASE

Type of Release	Spill Oil	Volume of Release	Unknown	Volume Recovered	8 bbls
Source of Release	Runover of API due to rain	Date and Hour of Occurrence	6/20/07 10 am	Date and Hour of Discovery	6/20/07 10 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher		
By Whom?	Darrell Moore	Date and Hour	6/20/07 11:30 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Due to heavy rain, API and sewer system ran over

Describe Area Affected and Cleanup Action Taken.* North part of plant. Vacuum truck picking up what they can. Contaminated soil will be removed.

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 DIVISION

Signature:	Darrell Moore	Approved by	District Supervisor:
Printed Name:	Darrell Moore	Approval Date:	Expiration Date:
Title:	Env. Mgr.	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	6/20/07	Phone:	748-3311

* Attach Additional Sheets If Necessary

District I
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Release Notification and Corrective Action

OPERATOR

☐ Initial Report

☐ Final Report

Name of Company <i>Navajo Refining Co.</i>	Contact <i>Darrell Moore</i>	
Address <i>501 E Main</i>	Telephone No. <i>505-748-3311</i>	
Facility Name <i>Navajo Refinery</i>	Facility Type <i>Petroleum Refinery</i>	
Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

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

NATURE OF RELEASE

Type of Release <i>Diesel</i>	Volume of Release <i>20 bbl.</i>	Volume Recovered <i>0 bbl.</i>
Source of Release <i>Overrun Sump</i>	Date and Hour of Occurrence <i>6/29/07 5:30 pm</i>	Date and Hour of Discovery <i>5:35 pm 6/29/07</i>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>Mike Bratcher</i>	
By Whom? <i>Darrell Moore</i>	Date and Hour <i>8:00 am 7/1/07</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Overrun sump at Tk 834 due to faulty float.

Describe Area Affected and Cleanup Action Taken.*
50' sw of Tk. Contaminated Soil will be removed and disposed.

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: <i>Darrell Moore</i>	OIL CONSERVATION DIVISION	
Printed Name: <i>Darrell Moore</i>	Approved by District Supervisor:	
Title: <i>Env. Mgr.</i>	Approval Date:	Expiration Date:
Date: <i>7/1/07</i> Phone: <i>748-3311</i>	Conditions of Approval:	Attached <input type="checkbox"/>

* Attach Additional Sheets If Necessary

SPILL REPORT (SR-1)
(5 bbl. or Greater)

1. Time of Spill 5:30 AM/PM 6-29-07 Date
2. Time Spill Contained 5:30 AM/PM 6-29-07 Date
3. Location of Spill 834 R
4. Type of Spill (Material) DSL + Water
5. Quantity of Spill 20 bbl. Size of Spill (area) 50' SW of TK
6. Disposition of Spilled Material Mix of DSL + Water
7. How was the Spill Contained Inside of TK dike - Soaked up in the dirt.
8. Did spill get into any drainage ditch, creek, arroyo, river, or waste water stream? YES ☐ NO ☒
9. If yes, did the spill leave company property or right-of-ways? YES ☐ NO ☐
10. Corrective action taken to prevent further spills: Replace the float inside the sump box. It failed to turn on the pump.
11. Name of person on duty at time of spill Dennis Smith
12. Physical location of responsible person at the time of spill Blender
13. Department Blender
14. Supervisor's Signature [Signature]

- NOTE -

In order to comply with federal laws, the Navajo Refining Company must report all spills within 24 hours to the regional office of the EPA. This form must be filled out completely and returned to the office of the Chief Environmentalist whenever a spill occurs. If, due to location, you cannot return this form within 24 hours, call the information to the Chief Environmentalist Office and then forward the form.

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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Release Notification and Corrective Action

OPERATOR

☒ Initial Report

☐ Final Report

Name of Company	Navajo Refining Co.	Contact	Darrell Moore
Address	501 E Main	Telephone No.	505-703-5058
Facility Name	Navajo Refining	Facility Type	Petroleum Refinery
Surface Owner		Mineral Owner	
		Lease No.	

LOCATION OF RELEASE

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

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Naptha Gasoline	100+ bbls.	60 bbls
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Over filled Tr 401	7/19/07 6:00 am	7/19/07 6:10 am
Was Immediate Notice Given?	If YES, To Whom?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	Mike Bratcher OCD	
By Whom?	Date and Hour	
Darrell Moore	7/19/07 7:15 am	
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* During shift change, Tr 401 was run over. Contents were contained inside dike. Vacuum truck picked up 60 bbls.

Describe Area Affected and Cleanup Action Taken.* Area is contained inside tank dike. In the process of digging up contaminated soil.

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: Darrell Moore	OIL CONSERVATION DIVISION		
Printed Name: Darrell Moore	Approved by District Supervisor:		
Title: Env. Mgr.	Approval Date:	Expiration Date:	
Date: 7/23/07	Phone: 505-748-3311	Conditions of Approval:	Attached <input type="checkbox"/>

* Attach Additional Sheets If Necessary

INCIDENT REPORT

DATE: 7-10-87 TIME OF INCIDENT: 1900

ROUTE: 1. FDG 2. JER 3. ENVIROMENTAL 4. SAFETY DEPT. 5. FILE

CIRCLE WHICH EVER APPLIES MAY BE MORE THAN ONE

SAFETY

ENVIRONMENTAL

CLOSE CALL

PERSONNEL

OPERATIONAL

Person making report

DANNY PAWZEN

TITLE:

SHIFTFORMAN

Personal on duty in area

QUINTEN PETTIS

Person or persons in charge of area

DESCRIPTION OF WHAT HAPPENED INCLUDE ANY SUGGESTIONS TO KEEP FROM HAVING REPEAT OCCURANCE

FINISHED LOADING RAIL CAR 2ND FROM WEST END. CLOSED UP
RAIL CAR. WENT TO START NEXT RAIL CAR TOWARDS EAST END
OF LINE STARTED PUMP WATCHED FOR AWHILE ABOUT 20 MIN.
TURNED & NOTICED THE SPOUT HE WAS USING ON LAST
RAIL CAR WAS PARTLY OPEN. WENT & CLOSED & CALLED
HENRY AND SHIFTFORMAN.
GUESS OF ABOUT 25 BARs. BY KENT BRADBURY.

This report does not take the place of the first report of accident or any other report that is required for accident investigation.

OTHER ACTION SUGGESTED OR REQUIRED PLEASE IDENTIFY ACTION AND SIGN.

WHILE LOADING CARS IT WAS RAINING REAL HARD
& LIGHTNING WAS GETTING CLOSE.

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Thursday, October 04, 2007 10:45 AM
To: Chavez, Carl J, EMNRD
Subject: Sewer Testing

Carl

We will be testing a section of the sewers in the ISOM Unit on Tuesday, October 9, 2007 beginning at 8am.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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10/4/2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, August 29, 2007 2:47 PM
To: 'Moore, Darrell'; Monzeglio, Hope, NMENV
Cc: Price, Wayne, EMNRD
Subject: RE: Mercury GPS Location

GW-28

Darrell:

In discussing this situation with Wayne Price, he indicated that for the OCD, Navajo Artesia Refinery should handle this release discovery as a Rule 116 investigation with corrective actions under the discharge plan permit. A report on the investigation and cleanup with disposal information needs to be documented and submitted to the OCD.

Since this is Mercury, a hazardous substance, NMED may have certain RCRA requirements for the remedial investigation and cleanup that should satisfy OCD requirements. Due to the serious nature of this substance, the proximity to the roadway and general public, and your prior message, it appears that you are proceeding to investigate the release discovery with experienced responders. Please assess the threat to public health and take proper measures to safeguard workers and the general public. If mercury is found to have impacted ground water, then Rule 19 ground water abatement may apply for OCD, but again, any RCRA cleanup requirements may satisfy OCD requirements. Please keep the OCD apprised on the investigation, any public health issues, and corrective actions to cleanup the Mercury. 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) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/oed/index.htm>
 (Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Wednesday, August 29, 2007 2:22 PM
To: Monzeglio, Hope, NMENV; Chavez, Carl J, EMNRD
Subject: RE: Mercury GPS Location

Here is the GPS location of the Mercury Spill

N 32 degrees 50.587 ' W 104 degrees 23.622'

From: Moore, Darrell
Sent: Wednesday, August 29, 2007 1:44 PM
To: 'Monzeglio, Hope, NMENV'; 'Chavez, Carl J, EMNRD'
Subject: RE: Mercury

Hope and Carl

Attached is a map of the area showing where the mercury spill was found. Carl has requested that we sample monitor well(s) to see if any mercury problems exist. The nearest monitor well to the area is MW-52 but it is slightly off-gradient. MW-48 is directly downgradient but quite a ways away. We will sample both wells for mercury and see what comes back. Carl also requested a Lat-Long on the spill and I am working on seeing if we can do

8/29/2007

that. As crazy as it sounds, apparently we don't have a GPS unit at this facility. We are trying to borrow one. I will forward that info when I get it.

From: Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]
Sent: Monday, August 27, 2007 8:29 AM
To: Moore, Darrell; Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Cc: Lackey, Johnny; Resinger, Jim; Whatley, Michael; Frischkorn, Cheryl, NMENV; Chavez, Carl J, EMNRD
Subject: RE: Mercury

Darrell

Please fax or email a site plan identifying the location of the mercury release. Is the location of the release in any of the areas where Group 1, 2 or 3 investigations have or will be taking place? My fax number is 505-476-6060.

Thanks
 Hope

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Friday, August 24, 2007 2:16 PM
To: Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Cc: Lackey, Johnny; Resinger, Jim; Whatley, Michael
Subject: Mercury

Wayne,

Per our phone conversation of August 24, 2007, Navajo is notifying OCD and NMED of a mercury spill that was discovered in the South Plant of our Artesia refinery. In the process of removing old piping, it was noticed that mercury was oozing out of the area where the excavation was taking place. All workers were removed from the site and the area was cordoned off. Our safety department was called and we will have workers put on protective suits and enter the area to further delineate the affected area. On first look, our estimate is that this spill is probably no more than a tablespoon or two. Any contaminated soil will be properly handled and disposed as will any free mercury we recover.

If there are any questions concerning this submission, please call me at 505-746-5281

Darrell Moore
 Environmental Manager for Water and Waste
 Navajo Refining Company, L.P.
 P.O. Box 159
 Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
 phone: 505.746.5281
 cell: 505.703.5058
 fax: 505.746.5451

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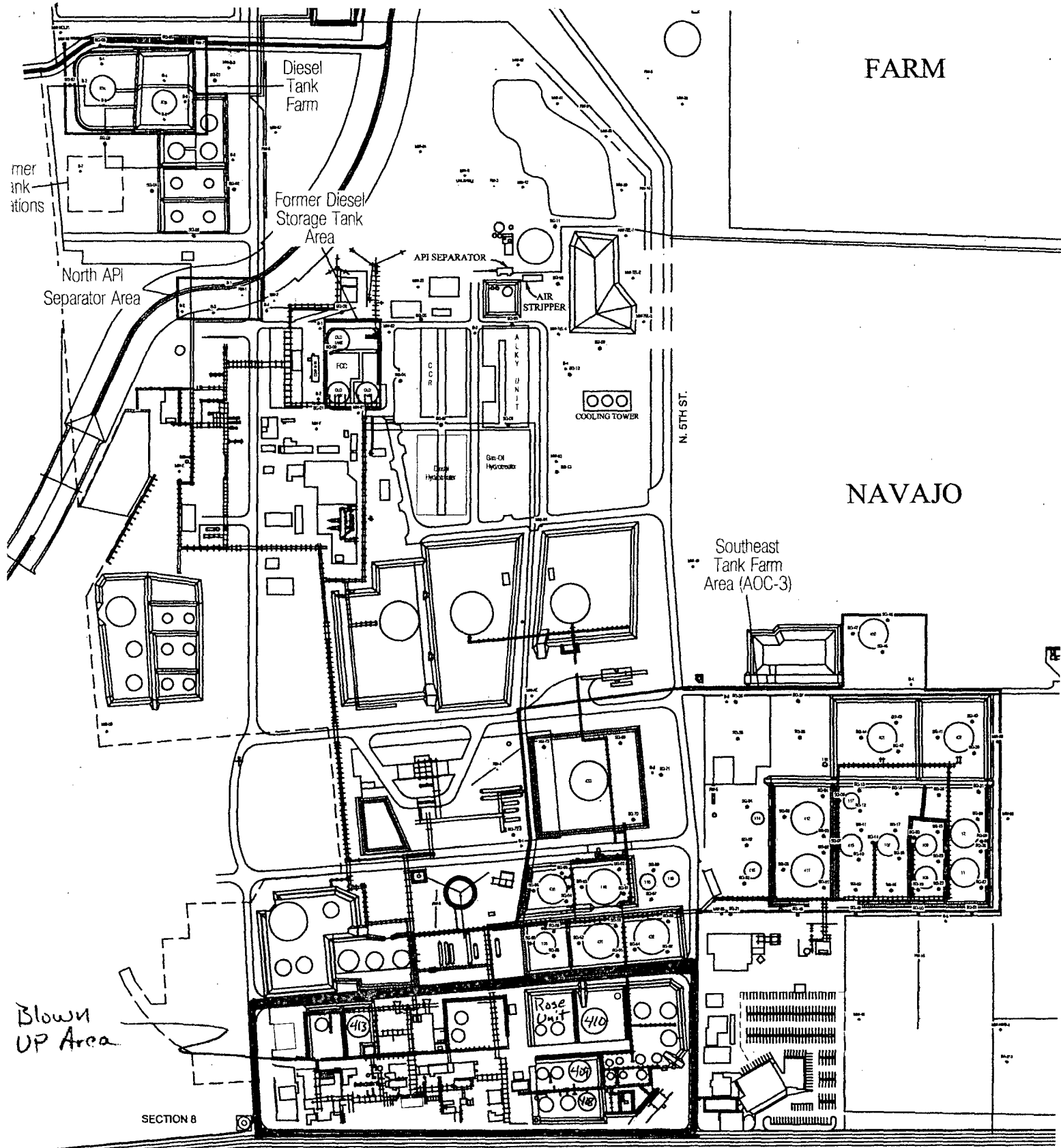
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8/29/2007



FARM

NAVAJO

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North API
Separator Area

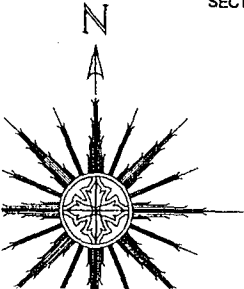
Southeast
Tank Farm
Area (AOC-3)

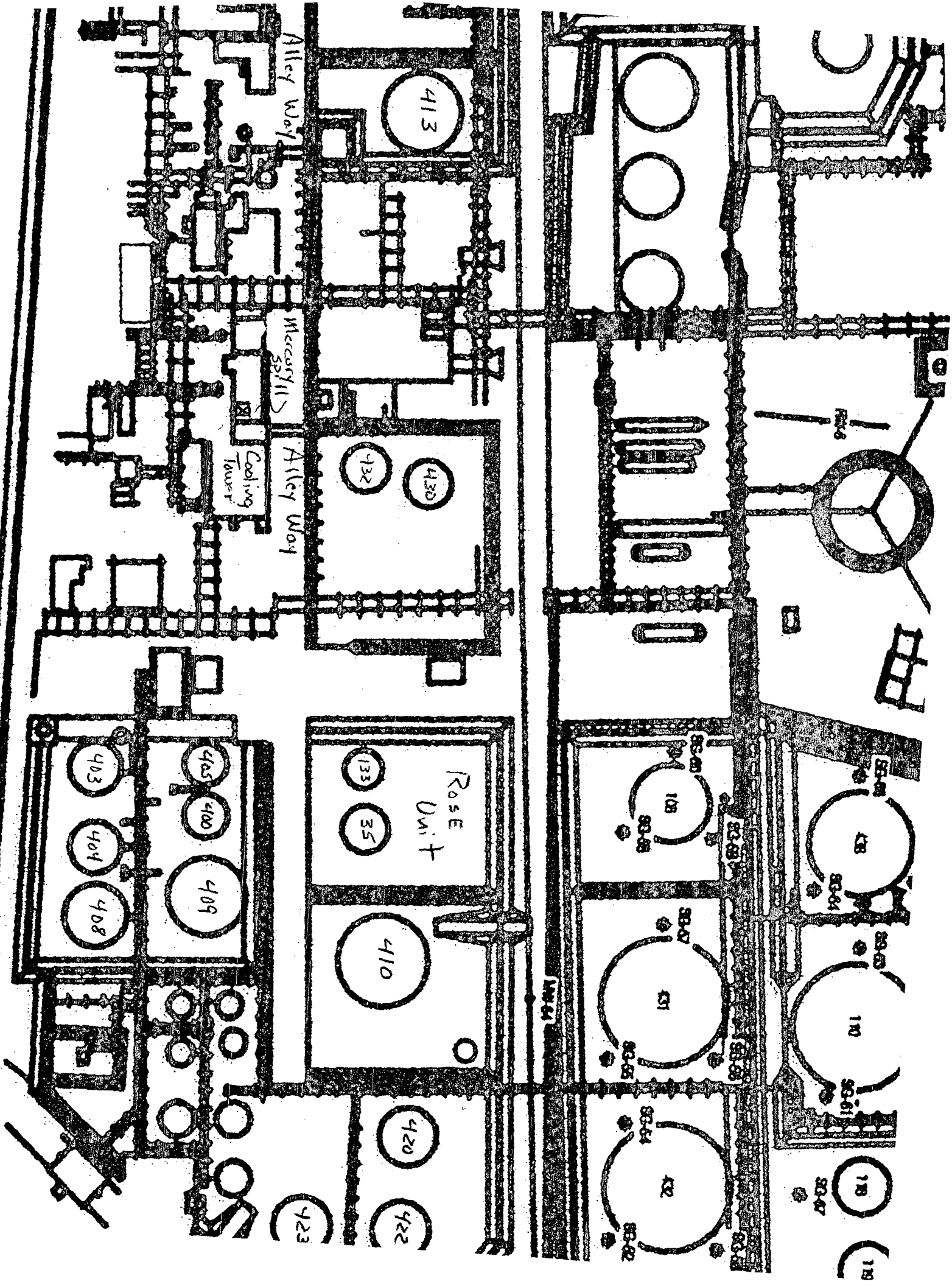
Blown
Up Area

SECTION 8

SECTION 17

SECTION 16





Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 07, 2007 12:54 PM
To: 'Jim Lieb'
Cc: Ed Riege
Subject: RE: Public Notice

Jim:

Ok, Giant's 30-day public notice period should end on Sept. 1, 2007. Let me know if the refinery receives any public comments during this period. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [<mailto:jl Lieb@giant.com>]
Sent: Monday, August 06, 2007 1:00 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege
Subject: Public Notice

Carl:

This is a copy of the public notice we had published in the Gallup Independent newspaper on Thursday August 2, 2007.

Jim

Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jl Lieb@giant.com

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8/7/2007

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 07, 2007 12:26 PM
To: Monzeglio, Hope, NMENV
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: Navajo upgradient wells installation

Hope:

The OCD has reviewed the locations of the upgradient monitor wells and locations proposed by the NMED. The OCD concurs with the number and locations of the 3 wells for obtaining background water quality data. Please contact me if you have questions. 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) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Monday, August 06, 2007 3:50 PM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: Navajo upgradient wells installation

Carl

NMED has called in a work plan for Navajo to install some upgradient monitoring wells. I have attached the *Installation of Upgradient Wells Workplan* from Navajo. The Work Plan does not give specific locations to install the upgradient wells. When I respond to the work plan, NMED's will recommend locations for three monitoring wells. The well locations NMED is proposing are found in the second attachment. The descriptions of the well locations are as follows:

- 1) One monitoring well must be installed approximately west of Hwy 285, north of Eagle Draw and between N.1st Street and N. 2nd Street in the Park west of the refinery.
- 2) second monitoring well must be installed approximately west of Hwy 285, north of West Main Street and Hwy 82, between W. Mahone Drive and W. JjClarke Drive in the park west of the refinery.
- 3) third monitoring well must be installed approximately west of Hwy. 285 on or between W. Texas Avenue and W. Chisum Avenue

Let me know if OCD agrees with these locations or would prefer some different locations?

Thanks
Hope

Hope Monzeglio
Environmental Specialist

8/7/2007

New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 476-6045
Main No.: (505)-476-6000
Fax: (505)-476-6030
hope.monzeglio@state.nm.us

Websites:

New Mexico Environment Department
Hazardous Waste Bureau

Please note the new phone numbers

8/7/2007



[100-197] N 2nd St
Artesia NM
88210 US

Notes:

Only text visible within note field will print.



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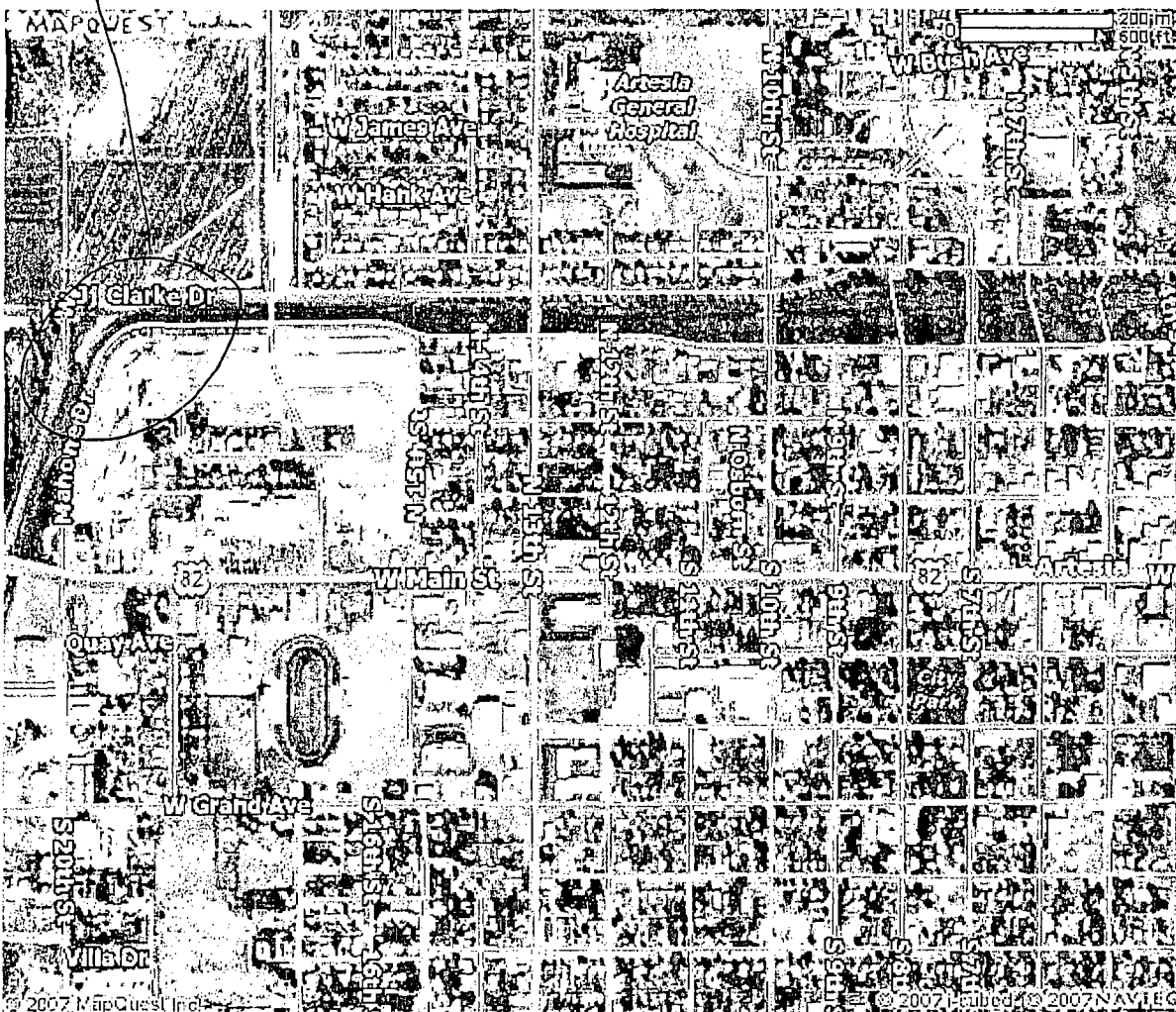
MAPQUEST

[100-197] N 2nd St
Artesia NM
88210 US

Notes:

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well



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MAPQUEST

[100-197] N 2nd St
Artesia NM
88210 US

Notes:

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Well

Refinery
over
here.



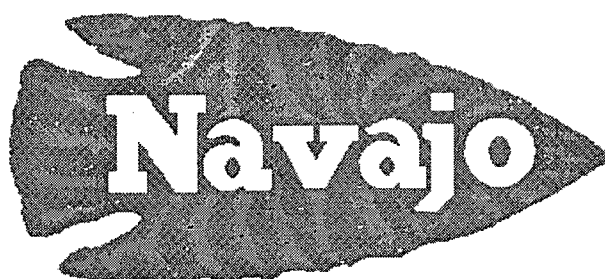
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NAVAJO REFINING COMPANY

ARTESIA REFINERY

Installation of Upgradient Wells Workplan
EPA ID No. NMD048918817



July 9, 2007

Navajo Refining Company
501 East Main Street, P.O. Drawer 159
Artesia, New Mexico 88210
505-748-3311



Brady T. Kolb
Task Manager / ARCADIS U.S., Inc.



Steven P. Fischer
SEIR Department Manager / ARCADIS U.S., Inc.



Darrell Moore
Environmental Manager - Water and Waste / Navajo Refining Co.

Navajo Refining Company
Artesia, New Mexico

Installation of Upgradient Wells
Workplan

EPA ID No.
NMD048918817

Prepared for
Navajo Refining Company

Prepared by
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File Ref:
WT000938.0001

Date
July 9, 2007

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Navajo Refining Company
Artesia, New Mexico

Installation of Upgradient
Wells Workplan

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- A. Monitor Well Installation
- B. Groundwater Sampling Methodology
- C. Investigation Derived Waste

1.0 Executive Summary

The Secretary of the New Mexico Environment Department (NMED) issued a Post-Closure Care Permit to the Navajo Refining Company, owner and operator of the Artesia Refinery Facility (EPA ID number NMD 048918817) effective October 5, 2003. The Permit authorizes and requires Navajo (the Permittee) to conduct post-closure care at closed surface impoundments (i.e. the Evaporation Ponds) and a closed land treatment unit at the Artesia refinery. The Permit establishes the general and specific standards for these activities, including a schedule to complete the Remedial Investigations at the surface impoundments and other identified solid waste management units (SWMUs) and Areas of Concern (AOCs), pursuant to the New Mexico Hazardous Waste Act (HWA), NMSA 1978, 74-4-1 *et. seq.* (Repl. Pamp. 1993) and the New Mexico Hazardous Waste Management Regulations, 20.4.1.100 NMAC *et seq.*

The Permit specifies a Corrective Action program that the Permittee will follow to address releases to soil and groundwater from the Evaporation Ponds (EPs), North Colony Landfarm (NCL), Tetraethyl Lead Impoundment (TEL) or other units if detected, during the post-closure care period. The investigation approach, sampling strategy, monitoring plan and remediation option, if applicable, for corrective action for detected soil and groundwater contamination is specific to the contaminants and release event(s) and is generally described in the permit.

The Permit requires that a work plan for investigation of the EPs be submitted to the NMED within 90 days of the effective date of the Permit. The Permit also requires submittal of investigation work plans for 14 additional SWMUs/AOCs, including Three-Mile Ditch (TMD), no later than four years from the effective date of the Permit. The initial investigation of SWMUs and AOCs was completed in 2003 and included drilling more than 100 total soil borings to investigate each facility. Soil and groundwater samples were collected from those soil borings. In a letter from the NMED dated September 15, 2006, the agency approved the investigation report with comments and recommendations for a work plan for additional investigation at each area to be submitted to the NMED by November 17, 2006.

This workplan describes the requirements and proposed procedures for the installation of two (2) upgradient monitor wells to establish NMED-approved background concentrations in groundwater at the facility. Background concentrations for groundwater will be determined from upgradient wells representative of natural conditions unaffected by site or other activities that could affect concentrations.

Navajo Refining Company
Artesia, New Mexico

Installation of Upgradient
Wells Workplan

Results from the two (2) monitor wells will be reported to the NMED within 150 days of the completion of field activities.

2.0 Introduction

The notice of deficiency letter from the NMED, dated August 17, 2006, regarding the 2005 Annual Groundwater Report for the Artesia Refinery specified submittal of a workplan to install upgradient wells to establish background groundwater concentrations. This workplan for installation of two (2) upgradient monitor wells details the methodologies for activities to be conducted at the facility.

This workplan provides specific requirements including:

- Approximate locations for installation of the two (2) upgradient monitor wells; and
- Collection of groundwater data to determine representative background groundwater concentrations.

3.0 Background

Navajo Refining Company operates a 80,000 barrel-per-day petroleum refinery located at 501 East Main Street in Artesia, Eddy County, New Mexico. The mailing address is:

Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159

The facility has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel and liquefied petroleum gas.

The Navajo refinery is regulated under the Resource Conservation and Recovery Act (RCRA), having EPA ID Number NM0048918817. The NMED issued a Hazardous Waste Facility Permit to Navajo effective August 21, 1989. This permit authorized Navajo to operate the North Colony Landfarm as a hazardous waste management unit. The North Colony Landfarm was used to manage hazardous wastes by employing biodegradation and other processes to eliminate or immobilize hazardous constituents. The North Colony Landfarm was used until 1990 when it was taken out of service.

The RCRA Permit was issued effective for ten years with an expiration date in August 1999. The first phase, for a Landfarm Treatment Demonstration, was to be effective for one year. Phase Two was for the landfarm operation and was to be issued for nine years upon completion of the land treatment demonstration. Use of the North Colony Landfarm was discontinued during the land treatment phase; therefore, the second phase for operation of the landfarm was never issued. However, the general permit conditions remained in effect for the original life of the issued permit and until the new permit was issued effective October 5, 2003.

Included as part of the 1989 Hazardous Waste Facility Permit was a Hazardous and Solid Waste Amendment (HSWA) Permit issued by the EPA. This permit required Navajo to identify all historical and current non-hazardous SWMUs and investigate those with the potential to pose a threat to human health or the environment. SWMUs which pose a potential threat must undergo additional investigation (a RCRA Facility Investigation, or RFI) and possibly corrective measures (Corrective Measure Implementation, or CMI) to minimize the threat. This entire process is referred to as Corrective Action.

From an initial list of nineteen SWMUs found at the Navajo refinery, three were identified as requiring further investigation: The Truck Bypass Landfarm, TMD, and the EPs. The Truck Bypass Landfarm had been used for treatment and management of non-hazardous oily wastes. TMD was used to convey treated processed wastewater to a series of ponds, referred to as EPs 1-6, located three miles east of the refinery. The EPs occupied an area of approximately 100 acres and used solar evaporation to eliminate treated wastewater since there was no other feasible option for disposal or discharge. Pond 1 was taken out of service in 1987 when the open ditch was replaced with a closed pipeline.

Intensive investigation of these three SWMUs began in late 1989. Following completion of the Phase I RCRA Facility Investigation (RFI) in December, 1990, the EPA and NMED agreed only annual monitoring was required for the Truck Bypass Landfarm, but that additional investigations were required for TMD and the EPs.

The second phase of investigation of TMD and the EPs was conducted from 1991 through 1993, resulting in the RFI Phase II Report finalized in November, 1993. In 1993, EPs 2-6, which are directly adjacent to Evaporation Pond 1 and were still in service, became the subject of litigation brought by EPA to force their closure. As a result of this litigation, further studies of Pond 1 and Ponds 2-6 were conducted on separate parallel paths with Ponds 2-6 being placed on an accelerated schedule.

Additional investigation work on Ponds 2-6 was completed in September 1993. A preliminary closure approach report was submitted to the EPA and NMED in October, 1993 and served as the basis for determining how Ponds 2-6 would be de-commissioned and closed. The first draft of the Closure Plan for Ponds 2-6 was submitted to the EPA and NMED in March 1995. Following additional human health and ecological risk studies, a final Closure Plan was submitted in August 1996. Details of the risk assessment and closure methodology were developed in conjunction with the EPA and the NMED. The risk assessment results indicated acceptable human health and ecological risks under an agricultural land use scenario.

During this period, studies of TMD, Pond 1 and the groundwater continued. A final Phase III Investigation Report addressing comments from the EPA and NMED was submitted in January 1996 along with a proposed work plan for removal of waste soils from TMD. Risk analyses conducted as part of the CMS Workplan indicated acceptable human health and ecological risk for future agricultural use of the site.

At the request of NMED, Navajo submitted a Post-Closure Permit Application in June

1998. The original intent of this application to address only closure and post-closure activities at the EPs and TMD was expanded to include a complete RCRA Permit renewal application. While the permit application was pending with NMED, no additional site investigation activities were undertaken.

The Secretary of the NMED issued a Post-Closure Care Permit to Navajo Refining Company, the owner and operator of the Artesia Refinery Facility (EPA ID number NMD 048918817) effective October 5, 2003. The Permit authorizes and requires Navajo (the Permittee) to conduct post-closure care at closed surface impoundments and a closed land treatment unit at the Artesia refinery. The permit also requires Navajo to submit workplans for investigation of all other identified SWMUs and Areas of concern (AOCs) within four years. The SWMU and AOCs were grouped into two related packages of areas in order to efficiently address the investigation needs at each SWMU or AOC. Group 1 includes SWMU-1 (North API Separator), AOC-1 (Diesel Tank Farm), AOC-2 (Former Diesel Storage Tanks), AOC-3 (Southeast Tank Farm Area).

Field investigation activities at SWMU-1/AOC Group 1 were conducted in April and May 2005. During this phase of field investigation, more than one-hundred soil gas sample points were drilled in and around the SWMU and AOCs.

This workplan for installation of two (2) upgradient monitor wells will allow for determination of background concentrations.

4.0 Site Conditions

The North API Separator (SWMU-1), located north-northwest of the active refinery processing units and just south of Eagle Creek, was removed from service in 2001. The initial investigation was intended to determine if there were contaminated soils associated with the unit that may pose a threat of release to groundwater. During the spring 2005 investigation, four soil borings were installed at this AOC. As summarized above further soil and groundwater study in this area will be conducted to delineate existing plume dimensions.

The Diesel Tank Farm (AOC-1) is located in the northwest portion of the refinery. The Diesel Tank Farm is believed to have been the source of groundwater contamination discovered beneath the North Colony Landfarm (NCL), as well as the source of phase-separated hydrocarbons (PSH) discovered in a monitoring well east of the NCL in the early 1990s.

The Former Diesel Storage Tanks (AOC-2) in the north plant processing area were located at the site now occupied by the Fluid Catalytic Cracking Unit (FCCU). Three diesel storage tanks dating back to the 1940s or 1950s were demolished in the 1970s prior to construction of the FCCU. The site lies to the west of the closed tetraethyl lead unit (TEL), which is a closed hazardous waste unit, where contaminants and PSH consistent with diesel have been found in both upgradient and downgradient wells. Four soil borings and thirteen soil gas sample points were installed around AOC-2 during the spring of 2005 investigation.

The Southeast Tank Farm (AOC-3) consist of 26 acres of land occupied by 22 product and intermediate storage tanks ranging in size from about 10,000 barrels (BBL) to over 50,000 bbl. Tanks in this area are primarily used for storage of finished gasoline. PSH consistent with gasoline has been found in nearby and off-site monitor wells and recovery wells, both upgradient and downgradient from AOC-3. Seventy-three soil gas sample points and five soil borings were drilled. Soil samples were obtained and analyzed from the Southeast Tank Farm area during the spring of 2005.

5.0 Scope of Investigation

This work plan describes the requirements and the proposed installation of two (2) upgradient monitor wells as prescribed in the notice of deficiency from the NMED dated August 17, 2006. The installation will focus on obtaining background groundwater concentrations from the two wells. Following completion of the field portion of the investigation and receipt of laboratory results, Navajo will prepare and submit to the NMED the results of the background groundwater samples.

5.1 Installation of Upgradient Monitor Wells

As prescribed in the notice of deficiency from the NMED dated August 17, 2006, the proposed scope of work for the installation of upgradient wells is summarized as follows:

- Install two (2) monitor wells upgradient of the facility (directly west of Hwy 285 from the facility). Exact locations will be determined based on acquisition of offsite access and as restricted by underground and overhead utility lines; and
- Collect groundwater data to obtain representative background groundwater concentrations from upgradient wells using samples from two (2) monitor wells.

6.0 Groundwater Methods

6.1 Monitor Well Installation

Monitor wells will be installed using a truck-mounted hollow stem auger rig. Monitor well borings will be continuously sampled using a split-spoon sampling device or similar methods. Soil samples from monitor well borings will be field screened with a PID in a similar manner to soil borings. Soil samples will be collected from monitor wells at the same intervals as borings. Each well will be completed to a depth of approximately 30 feet with 15 feet of four-inch mill-slotted screen and blank casing to surface. Details for monitor well drilling, installation, development and sampling can be found in Appendix A.

6.2 Monitor Well Groundwater Samples

Groundwater samples will be collected from the two (2) newly-installed monitor wells using low-flow sampling methods. The samples will be submitted for laboratory analysis for:

- VOCs by method 8260B;
- SVOCs by method 8270C;
- RCRA 8 metals by method 6010/7471;
- Major cations (calcium, magnesium., potassium, sodium) by method 6010;
- Major anions by method 325.2 (chloride), method 300.0 (fluoride), method 375.4 (sulfates);
- Cyanide by method 335.2;
- Specific conductance;
- pH by method 150.1; and
- TDS by method 160.1.

Prior to sampling, water levels will be measured. Purging and sampling methodology is detailed in Appendix B. Appendix C describes management procedures for investigation derived waste (IDW).

7.0 Schedule

Field activities to implement the workplan should be initiated within 90 days of final approval of the workplan by the NMED, unless delayed by weather or equipment availability. Navajo will notify the NMED at least one week prior to the expected start of field activities. It is anticipated that completion of field activities will take approximately two days. Navajo will submit the results to NMED within 150 days of completing field activities.

8.0 Appendices

APPENDIX A – MONITOR WELL INSTALLATION

Drilling

Exploratory borings will be installed using a hollow-stem auger rig. All drilling equipment will be in good working condition and capable of performing the assigned task. Drilling rigs and equipment will be operated by properly trained, experienced and responsible crews. The drilling equipment will be decontaminated before drilling each boring.

Exploratory borings will be advanced to location and specific depths specified in this workplan.

The Secretary will be notified as early as is practicable if conditions arise or are encountered that do not allow the advancement of borings to the depths specified in the workplan so that alternative actions may be discussed. Precautions will be taken to prevent the migration of contaminants between geologic, hydrologic or other identifiable zones during drilling and well installation activities.

The drilling and sampling will be accomplished under the direction of a qualified engineer or geologist who will maintain a detailed log of the materials and conditions encountered in each boring. Sample information and visual observations of the cuttings and core samples will be recorded on the boring log. Known site features and/or site survey grid markers will be used as references to locate each boring prior to surveying the location.

Logging of Soil Samples

Samples obtained from all exploratory borings will be visually inspected and the soil or rock type classified in general accordance with ASTM (American Society for Testing and Materials) D2487 [Unified Soil Classification System] and D2488 and/or AGI (American Geological Institute) Methods for soil and rock classification. Detailed logs of each boring will be completed in the field by a qualified engineer or geologist. Additional information, such as the presence of water-bearing zones and any unusual or noticeable conditions encountered during drilling will be recorded on the logs. Field boring, test pit logs and field well construction diagrams will be converted to the format acceptable for use in final reports submitted to the Secretary.

Monitor Well Installation

A subcontracted drilling company, under the supervision of an ARCADIS geologist/engineer and field technician, will install all monitor wells to a maximum depth of 30 feet bgs. The monitor wells will be drilled using a truck-mounted hollow-stem auger drill rig with at least 8.5-inch diameter (OD) auger flights. All augers will be decontaminated prior to drilling, and between advancement of each borehole using dry-scrubbing, a heated pressure washer and laboratory-grade soap solution. Ambient air will be monitored during drilling to protect the health of all workers.

Soil cuttings will be placed in 55-gallon drums, labeled with associated monitor well and stored at each location until soil sample analytical results can be assessed. Drums may be consolidated on-site for storage until disposal.

Each monitor well will be completed with 15 feet of Schedule 40, four-inch diameter, flush-threaded, o-ring sealed, 0.020 machine slotted PVC well screen with a sediment sump bottom cap attached to the base of the screen. The screen will be installed at a depth that ensures approximately seven and one-half feet are above and seven and one-half feet are below the observed ground water level at the time the borehole is drilled. Blank casing of similar construction will be added to each well to reach approximately three feet above surface grade. The top of each well casing will be sealed with a locking, removable compression well cap. The annular space of each well will be filled with clean silica-based filter-pack sand (appropriately sized to prevent fines from entering the well) to a level of approximately two feet above the screened interval. At least a two-foot layer of hydrated bentonite pellets will be placed above the filter pack to prevent surface infiltration. Bentonite/cement grout will be added to reach near surface grade. The casing will extend at least 2 feet above ground surface and be protected by a locking steel well vault. A four foot by four foot by six inch concrete pad will be set around the well vault.

Development of the monitor wells will be accomplished by repetitive surging and bailing. Development will continue until temperature, pH and conductivity have stabilized to within ten percent of the previous reading.

ARCADIS will mark the north side of each well casing to establish a consistent datum for water level measurements. A New Mexico-licensed surveyor will survey the datum for each well. The location of each well will be surveyed to a vertical and horizontal accuracy of 0.01 feet and 0.1 feet, respectively.

APPENDIX B - GROUNDWATER SAMPLING METHODOLOGY

Monitor Well Groundwater Samples

Groundwater samples will be collected from the newly installed monitor wells using low-flow sampling methods. The samples will be submitted for laboratory analyses as described previously

Prior to sampling, groundwater levels will be measured in all monitoring wells using a water level indicator. Measurement data and the date and time of each measurement will be recorded on a site monitoring data sheet. The depth to ground water will be measured to the nearest 0.01 foot. The depth to groundwater will be recorded relative to the surveyed well casing rim or other surveyed datum.

Each monitoring well will be purged using gas-operated bladder-type pump by removing groundwater prior to sampling in order to ensure that formation water is being sampled. Purge volumes will be determined by monitoring, at a minimum, groundwater pH, specific conductance, temperature, Oxidation Reduction Potential (ORP) and dissolved oxygen concentrations during purging. Water samples will be obtained from the well after the measured parameters of the purge water have stabilized to within ten percent for three consecutive measurements. The groundwater quality parameters will be measured using a multiparameter instrument. The volume of groundwater purged, the instruments used and the readings obtained at each interval will be recorded on the field monitoring log. Well purging will be conducted in accordance with the NMED HWB Draft Position Paper "Use of Micropurging and Low-flow Sampling Techniques for Compliance Groundwater Monitoring" (October 2001).

Groundwater samples will be obtained from each well after a sufficient amount of water has been removed from the well casing to ensure that the sample is representative of formation water. Groundwater samples will be obtained using methods described in this workplan and the NMED HWB Draft Position Paper "Use of Micropurging and Low-flow Sampling Techniques for Compliance Groundwater Monitoring" within 24 hours of the completion of well purging. Sample collection methods will be documented in the field monitoring reports. The samples will be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory.

Groundwater samples intended for metals analysis will be submitted to the laboratory as total metals samples. Groundwater samples also may be obtained for dissolved metals analysis and will be filtered using 0.45 micron disposable in-line filters.

Groundwater Sample Types

Field duplicates, field blanks, equipment rinseate blanks and trip blanks will be obtained for quality assurance during groundwater and surface water sampling activities.

Field duplicate groundwater samples will be obtained at a frequency of ten percent. At a minimum, one duplicate sample per sampling event will always be obtained.

Field blanks will be obtained at a minimum frequency of one per day per site or unit. Field blanks will be generated by filling sample containers in the field with deionized water and submitting the samples with the groundwater samples to the analytical laboratory for the appropriate analyses.

Equipment rinseate blanks will be obtained for chemical analysis at the rate of ten percent or a minimum of one rinseate blank per sampling day. Equipment rinseate blanks will be collected at a rate of one per sampling day if disposable sampling apparatus is used. Rinseate samples will be generated by rinsing deionized water through unused or decontaminated sampling equipment. The rinseate sample then will be placed in the appropriate sample container and submitted with the groundwater samples to the analytical laboratory for the appropriate analyses.

Trip blanks will accompany laboratory sample bottles and shipping and storage containers intended for VOC analyses. Trip blanks will consist of a sample of analyte-free deionized water prepared by the laboratory and placed in an appropriate sample container. The trip blank will be prepared by the analytical laboratory prior to the sampling event and will be kept with the shipping containers and placed with other water samples obtained from the site each day. Trip blanks will be analyzed at a frequency of one for each shipping container of samples.

APPENDIX C - INVESTIGATION DERIVED WASTE

Investigation Derived Waste (IDW) includes general refuse, drill cuttings, excess sample material, water (decontamination, development and purge) and disposable equipment generated during the course of investigation. All IDW will be properly characterized and disposed of in accordance with all federal, state and local rules and regulations for storage, labeling, handling, transport and disposal of waste.

Soil boring cuttings generated during sampling activities will be contained in labeled 55-gallon drums and will remain onsite. Prior to placing in drums, a five-point composite soil sample representative of the contents of each drum will be collected and submitted for laboratory analysis for VOCs, SVOCs and RCRA metals. Based on the results of the sample analyses the soil cuttings will either be disposed at an approved waste disposal facility or will be spread on-site.

All water generated during sampling and decontamination activities will be temporarily stored in labeled 55-gallon drums. A water sample from each drum will be collected and submitted for laboratory analysis for SVOCs and VOCs. Based on the results of the sample analyses the water will either be disposed at an approved waste disposal facility, used as process water at the refinery or will be emptied on-site.

Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollycorp.com]
Sent: Monday, August 06, 2007 2:12 PM
To: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Cc: Lackey, Johnny; David Boyer
Subject: FW: 707698 TK 838 Hydrotest #2 Final/Invoice
Attachments: 707698 TK 838 Hydrotest #2 Final.pdf; 707698 Invoice.pdf

Wayne,

A week ago we asked for permission to discharge some hydrotest water from TK 838 to our farm even though the water was over the WQCC limit for iron. You approved that request, however, the tank failed the hydrotest so we had to empty the tank and repair the leak. We have now refilled the tank with fresh water and. lo and behold, it failed for iron again. As before we are asking to be allowed to discharge this water to our farm. Im confident that the high iron reading is from the metal in the tank. If you could reply to this e mail I would appreciate it.

Darrell Moore

From: Croston, Jeffrey [mailto:jcroston@elabi.com]
Sent: Monday, August 06, 2007 1:21 PM
To: Byrd, Jeff
Cc: Moore, Darrell
Subject: 707698 TK 838 Hydrotest #2 Final/Invoice

Jeff,

Please see the attached files that contain the results for your project and the invoice. No hardcopy version will be sent. Please let me know if you have any questions.

Thanks,
 Jeff

Jeff Croston
 Project Manager
 e-Lab Analytical, Inc.
 10450 Stancliff Rd, Suite 210
 Houston, Texas 77099
 281-530-5656 (phone)
 281-530-3053 (fax)
jcroston@elabi.com

 This transmittal and/or attachment (the Communication") is confidential to e-Lab, Inc. and may also be a confidential attorney-client communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this Communication in error and any dissemination, distribution or copying of this Communication is strictly prohibited.

If you have received this Communication in error, please notify us immediately by reply e-mail or by telephone (281-530-5656) and promptly delete and purge this Communication.

This inbound email has been scanned by the MessageLabs Email Security System.

8/7/2007

8/7/2007



INVOICE

Printed on: August 06, 2007

Original

Remit To: e-Lab Analytical, Inc.
PO Box 3014
Houston, Texas 77253
Attn: Accounts Receivable
TEL: (281) 530-5656
FAX: (281) 530-5887

Invoice To: Navajo Refining Company
PO Box 159
Artesia, NM 88211

Attn: Vendor Payable Group
Phone: (505) 748-3311

Work Order: 0707698
PO Number: 56192
Order Name: TK 838 Hydrotest #2
Project Contact: Jeff Byrd
Date Received: 7/31/2007

Invoice No: 10-0707698-0
Invoice Date: Aug 06 2007
Payment Due: Oct 05 2007
Payment Terms: Net 60 days

<u>Item/Remarks</u>	<u>Matrix</u>	<u>Qty</u>	<u>Unit Price</u>	<u>Mult</u>	<u>List Price</u>	<u>Test Total</u>
Alkalinity	Aqueous	1	\$20.00	1	\$20.00	\$20.00
Ammonia as N	Aqueous	1	\$20.00	1	\$20.00	\$20.00
Anions by Ion Chromatography F,Cl,SO4,NO3/NO2	Aqueous	1	\$75.00	1	\$75.00	\$75.00
BOD, 5 Day, 20°C	Aqueous	1	\$35.00	1	\$35.00	\$35.00
Chemical Oxygen Demand	Aqueous	1	\$25.00	1	\$25.00	\$25.00
Cyanide, Total	Aqueous	1	\$30.00	1	\$30.00	\$30.00
ICP Metals, Total WQCC + cations	Aqueous	1	\$200.00	1	\$200.00	\$200.00
Organochlorine Pesticides	Aqueous	1	\$130.00	1	\$130.00	\$130.00
PCBs	Aqueous	1	\$70.00	1	\$70.00	\$70.00
pH	Aqueous	1	\$7.00	1	\$7.00	\$7.00
Phenolics	Aqueous	1	\$40.00	1	\$40.00	\$40.00
Semivolatile Organics by GC/MS Select	Aqueous	1	\$210.00	1	\$210.00	\$210.00
Total Dissolved Solids	Aqueous	1	\$10.00	1	\$10.00	\$10.00
Total Suspended Solids	Aqueous	1	\$10.00	1	\$10.00	\$10.00
Volatiles by GC/MS Select	Aqueous	1	\$110.00	1	\$110.00	\$110.00

Invoice To: Navajo Refining Company
PO Box 159
Artesia, NM 88211

Attn: Vendor Payable Group
Phone: (505) 748-3311

Work Order: 0707698
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<u>Item/Remarks</u>	<u>Matrix</u>	<u>Qty</u>	<u>Unit Price</u>	<u>Mult</u>	<u>List Price</u>	<u>Test Total</u>
			Discount 0%			\$0.00
			Surcharge 70%			\$694.40
Misc Comments Surcharge for 3 Day TAT			Misc Charges:			\$0.00

Payment Received: \$0.00

INVOICE TOTAL (USD): \$1,686.40

Invoice is due and payable within the above referenced terms. A finance charge of 1.5% will be added to past due accounts.

Thank you for choosing e-Lab Analytical, Inc.



e-Lab Analytical, Inc.

10450 Standliff Rd, Suite 210 Houston, Texas 77099-4338 (281) 530-5656 Fax (281) 530-5887

August 06, 2007

Jeff Byrd
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (505) 746-5468
Fax: (505) 746-5421

Re: TK 838 Hydrotest #2

Work Order : **0707698**

Dear Jeff Byrd,

e-Lab Analytical, Inc. received 1 sample on 7/31/2007 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab Analytical, Inc. 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 e-Lab Analytical, Inc. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 39.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Rebecca L. Hunt

Jeffrey L Croston
Project Manager



Certificate No: T104704231-06-TX

CLIENT: Navajo Refining Company
Project: TK 838 Hydrotest #2
Work Order: 0707698

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
0707698-01	TK838	Water		7/30/2007 15:00	7/31/2007 09:00	<input type="checkbox"/>

CLIENT: Navajo Refining Company
Project: TK 838 Hydrotest #2
Work Order: 0707698

Case Narrative

pH (sample TK838) was analyzed out of the recommended holding time, which should be analyzed immediately after collection. Sample was analyzed immediately upon receipt of the laboratory.

Batch 24877 Metals MS/MSD was an unrelated sample.

Batch R52888 Volatiles MS/MSD was an unrelated sample.

Batch R52860 Anions MS/MSD was an unrelated sample.

e-Lab Analytical, Inc.

Date: August 06, 2007

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotect #2
Lab ID: 0707698-01

Client Sample ID: TK838
Collection Date: 7/30/2007 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			SW8081		Prep Date: 7/31/2007	Analyst: JLJ
4,4'-DDD	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
4,4'-DDE	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
4,4'-DDT	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Aldrin	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
alpha-BHC	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
beta-BHC	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Chlordane	ND		0.50	µg/L	1	7/31/2007 11:43:00 PM
delta-BHC	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Dieldrin	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Endosulfan I	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Endosulfan II	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Endosulfan sulfate	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Endrin	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Endrin aldehyde	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
Endrin ketone	ND		0.10	µg/L	1	7/31/2007 11:43:00 PM
gamma-BHC	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Heptachlor	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Heptachlor epoxide	ND		0.050	µg/L	1	7/31/2007 11:43:00 PM
Methoxychlor	ND		0.50	µg/L	1	7/31/2007 11:43:00 PM
Toxaphene	ND		0.50	µg/L	1	7/31/2007 11:43:00 PM
Surr: Decachlorobiphenyl	96.0		54.9-145	%REC	1	7/31/2007 11:43:00 PM
Surr: Tetrachloro-m-xylene	84.5		51.5-142	%REC	1	7/31/2007 11:43:00 PM
PCBS			SW8082		Prep Date: 7/31/2007	Analyst: JBA
Aroclor 1016	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1221	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1232	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1242	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1248	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1254	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Aroclor 1260	ND		0.500	µg/L	1	8/1/2007 9:13:00 PM
Surr: Decachlorobiphenyl	82.3		54-140	%REC	1	8/1/2007 9:13:00 PM
Surr: Tetrachloro-m-xylene	76.3		53-137	%REC	1	8/1/2007 9:13:00 PM
MERCURY, TOTAL			SW7470		Prep Date: 7/31/2007	Analyst: JCJ
Mercury	ND		0.000200	mg/L	1	7/31/2007 6:35:59 PM
ICP METALS, TOTAL			SW6020		Prep Date: 8/1/2007	Analyst: ALR
Aluminum	ND		0.0100	mg/L	1	8/2/2007 10:33:00 AM
Arsenic	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Barium	0.0186		0.00500	mg/L	1	8/1/2007 7:39:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 P - Dual Column results percent difference > 40%
 E - Value above quantitation range
 H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: August 06, 2007

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2
Lab ID: 0707698-01

Client Sample ID: TK838
Collection Date: 7/30/2007 3:00:00 PM

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Beryllium	ND		0.00200	mg/L	1	8/1/2007 7:39:00 PM
Boron	0.0438		0.0200	mg/L	1	8/1/2007 7:39:00 PM
Cadmium	ND		0.00200	mg/L	1	8/1/2007 7:39:00 PM
Calcium	142		0.500	mg/L	1	8/1/2007 7:39:00 PM
Chromium	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Cobalt	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Copper	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Iron	1.04		0.200	mg/L	1	8/1/2007 7:39:00 PM
Lead	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Magnesium	43.8		0.200	mg/L	1	8/1/2007 7:39:00 PM
Manganese	0.0769		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Molybdenum	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Nickel	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Potassium	1.01		0.200	mg/L	1	8/1/2007 7:39:00 PM
Selenium	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Silver	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Sodium	12.6		0.200	mg/L	1	8/2/2007 10:33:00 AM
Vanadium	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM
Zinc	ND		0.00500	mg/L	1	8/1/2007 7:39:00 PM

SEMIVOLATILE ORGANICS BY GC/MS**SW8270**

Prep Date: 7/31/2007

Analyst: ACN

1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2,4,5-Trichlorophenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2,4,6-Trichlorophenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2-Methylnaphthalene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2-Methylphenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2-Nitroaniline	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
2-Nitrophenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
3&4-Methylphenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
3-Nitroaniline	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
4-Nitroaniline	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
4-Nitrophenol	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Acenaphthene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Acenaphthylene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Aniline	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Anthracene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Benz(a)anthracene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Benzidine	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Hexachloroethane	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Indeno(1,2,3-cd)pyrene	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM
Isophorone	ND	5.0	µg/L	1	8/1/2007 12:46:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: August 06, 2007

CLIENT: Navajo Refining Company

Client Sample ID: TK838

Work Order: 0707698

Collection Date: 7/30/2007 3:00:00 PM

Project: TK 838 Hydrotest #2

Lab ID: 0707698-01

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
N-Nitrosodi-n-propylamine	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
N-Nitrosodimethylamine	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
N-Nitrosodiphenylamine	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Naphthalene	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Nitrobenzene	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Pentachlorophenol	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Phenanthrene	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Phenol	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Pyrene	ND		5.0	µg/L	1	8/1/2007 12:46:00 PM
Surr: 2,4,6-Tribromophenol	51.6		42-124	%REC	1	8/1/2007 12:46:00 PM
Surr: 2-Fluorobiphenyl	66.4		48-120	%REC	1	8/1/2007 12:46:00 PM
Surr: 2-Fluorophenol	49.7		20-120	%REC	1	8/1/2007 12:46:00 PM
Surr: 4-Terphenyl-d14	63.7		51-135	%REC	1	8/1/2007 12:46:00 PM
Surr: Nitrobenzene-d5	62.0		41-120	%REC	1	8/1/2007 12:46:00 PM
Surr: Phenol-d6	59.4		20-120	%REC	1	8/1/2007 12:46:00 PM
VOLATILES BY GC/MS			SW8260		Analyst: PC	
1,1,1-Trichloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
1,1,2,2-Tetrachloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
1,1,2-Trichloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
1,1-Dichloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
1,1-Dichloroethene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
1,2-Dichloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
2-Butanone	ND		10	µg/L	1	7/31/2007 7:25:00 PM
2-Chloroethyl vinyl ether	ND		10	µg/L	1	7/31/2007 7:25:00 PM
2-Hexanone	ND		10	µg/L	1	7/31/2007 7:25:00 PM
4-Methyl-2-pentanone	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Acetone	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Benzene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Bromodichloromethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Bromoform	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Bromomethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Carbon disulfide	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Carbon tetrachloride	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Chlorobenzene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Chloroethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Chloroform	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Chloromethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
cis-1,3-Dichloropropene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Dibromochloromethane	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Ethylbenzene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 P - Dual Column results percent difference > 40%
 E - Value above quantitation range
 H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: August 06, 2007

CLIENT: Navajo Refining Company

Client Sample ID: TK838

Work Order: 0707698

Collection Date: 7/30/2007 3:00:00 PM

Project: TK 838 Hydrotest #2

Lab ID: 0707698-01

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
m,p-Xylene	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Methylene chloride	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Styrene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Tetrachloroethene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Toluene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
trans-1,3-Dichloropropene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Trichloroethene	ND		5.0	µg/L	1	7/31/2007 7:25:00 PM
Vinyl acetate	ND		10	µg/L	1	7/31/2007 7:25:00 PM
Vinyl chloride	ND		2.0	µg/L	1	7/31/2007 7:25:00 PM
Xylenes, Total	ND		15	µg/L	1	7/31/2007 7:25:00 PM
Surr: 1,2-Dichloroethane-d4	96.9		70-125	%REC	1	7/31/2007 7:25:00 PM
Surr: 4-Bromofluorobenzene	103		72-125	%REC	1	7/31/2007 7:25:00 PM
Surr: Dibromofluoromethane	98.4		71-125	%REC	1	7/31/2007 7:25:00 PM
Surr: Toluene-d8	102		75-125	%REC	1	7/31/2007 7:25:00 PM
ANIONS BY ION CHROMATOGRAPHY			E300			Analyst: LMD
Chloride	14.4		0.500	mg/L	1	7/31/2007 9:57:00 PM
Fluoride	0.850		0.100	mg/L	1	7/31/2007 9:57:00 PM
Sulfate	397		12.5	mg/L	25	7/31/2007 10:46:00 PM
Nitrate/Nitrite (as N)	0.695		0.100	mg/L	1	7/31/2007 9:57:00 PM
Surr: Selenate (surr)	98.6		85-115	%REC	25	7/31/2007 10:46:00 PM
Surr: Selenate (surr)	95.8		85-115	%REC	1	7/31/2007 9:57:00 PM
ALKALINITY			E310.1			Analyst: JNK
Alkalinity, Bicarbonate (As CaCO3)	197		5.00	mg/L	1	8/2/2007
Alkalinity, Carbonate (As CaCO3)	ND		5.00	mg/L	1	8/2/2007
Alkalinity, Hydroxide (As CaCO3)	ND		5.00	mg/L	1	8/2/2007
Alkalinity, Total (As CaCO3)	197		5.00	mg/L	1	8/2/2007
BOD, 5 DAY, 20°C			E405.1		Prep Date: 8/1/2007	Analyst: RPM
Biochemical Oxygen Demand	ND		2.00	mg/L	1	8/1/2007
CYANIDE, TOTAL			E335.3			Analyst: TH
Cyanide	ND		0.0200	mg/L	1	8/2/2007
CHEMICAL OXYGEN DEMAND			E410.4			Analyst: TH
Chemical Oxygen Demand	ND		15.0	mg/L	1	8/1/2007
AMMONIA AS N			SM4500 NH3-B-F			Analyst: RPM
Nitrogen, Ammonia (as N)	ND		0.0250	mg/L	1	7/31/2007
PH			E150.1			Analyst: JNK
pH	6.87	H	0.100	pH units	1	7/31/2007
PHENOLICS			E420.1			Analyst: RPM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: August 06, 2007

CLIENT: Navajo Refining Company

Client Sample ID: TK838

Work Order: 0707698

Collection Date: 7/30/2007 3:00:00 PM

Project: TK 838 Hydrotest #2

Lab ID: 0707698-01

Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Phenolics, Total Recoverable	ND		0.0500	mg/L	1	7/31/2007
TOTAL DISSOLVED SOLIDS			E160.1			Analyst: JNK
Total Dissolved Solids (Residue, Filterable)	865		10.0	mg/L	1	7/31/2007
TOTAL SUSPENDED SOLIDS			E160.2			Analyst: JNK
Suspended Solids (Residue, Non-Filterable)	6.00		2.00	mg/L	1	7/31/2007

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab Analytical, Inc.

Date: Aug 06 2007

CLIENT: Navajo Refining Company

QC BATCH REPORT

Work Order: 0707698

Project: TK 838 Hydrotest #2

Batch ID: 24868

Instrument ID ECD_5

Method: SW8081

MBLK Sample ID: PBLKW1-070731

Units: µg/L

Analysis Date: 07/31/07 21:59

Client ID:

Run ID: ECD_5_070730B

SeqNo: 1181272

Prep Date: 7/31/2007

DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	ND	0.10								
4,4'-DDE	ND	0.10								
4,4'-DDT	ND	0.10								
Aldrin	ND	0.050								
alpha-BHC	ND	0.050								
beta-BHC	ND	0.050								
Chlordane	ND	0.50								
delta-BHC	ND	0.050								
Dieldrin	ND	0.10								
Endosulfan I	ND	0.050								
Endosulfan II	ND	0.10								
Endosulfan sulfate	ND	0.10								
Endrin	ND	0.10								
Endrin aldehyde	ND	0.10								
Endrin ketone	ND	0.10								
gamma-BHC	ND	0.050								
Heptachlor	ND	0.050								
Heptachlor epoxide	ND	0.050								
Methoxychlor	ND	0.50								
Toxaphene	ND	0.50								
Surr: Decachlorobiphenyl	0.1984	0.10	0.2	0	99.2	54.9-145		0		
Surr: Tetrachloro-m-xylene	0.1785	0.050	0.2	0	89.2	51.5-142		0		

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in assoc. Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

U - Analyzed for but not detected

O - Referenced analyte value is > 4 times amount spiked

P - Dual Column results percent difference > 40%

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24868 Instrument ID ECD_5 Method: SW8081

LCS Sample ID: PLCSW1-070731 Units: µg/L Analysis Date: 07/31/07 22:34

Client ID: Run ID: ECD_5_070730B SeqNo: 1181273 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4638	0.10	0.5	0	92.8	53-144	0			
4,4'-DDE	0.4865	0.10	0.5	0	97.3	55-144	0			
4,4'-DDT	0.4745	0.10	0.5	0	94.9	53-149	0			
Aldrin	0.2298	0.050	0.25	0	91.9	47-141	0			
alpha-BHC	0.2358	0.050	0.25	0	94.3	51-141	0			
beta-BHC	0.2374	0.050	0.25	0	95	58-144	0			
delta-BHC	0.2378	0.050	0.25	0	95.1	48-146	0			P
Dieldrin	0.475	0.10	0.5	0	95	56-144	0			
Endosulfan I	0.2384	0.050	0.25	0	95.4	55-141	0			
Endosulfan II	0.5479	0.10	0.5	0	110	57-144	0			
Endosulfan sulfate	0.5084	0.10	0.5	0	102	58-145	0			
Endrin	0.5267	0.10	0.5	0	105	60-163	0			
Endrin aldehyde	0.5041	0.10	0.5	0	101	59-158	0			
Endrin ketone	0.5185	0.10	0.5	0	104	59-154	0			
gamma-BHC	0.2359	0.050	0.25	0	94.4	53-142	0			
Heptachlor	0.2471	0.050	0.25	0	98.8	51-144	0			P
Heptachlor epoxide	0.2345	0.050	0.25	0	93.8	55-142	0			
Methoxychlor	2.654	0.50	2.5	0	106	59-150	0			
Surr: Decachlorobiphenyl	0.2182	0.10	0.2	0	109	61-154	0			
Surr: Tetrachloro-m-xylene	0.1924	0.050	0.2	0	96.2	60-144	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24868 Instrument ID ECD_5 Method: SW8081

LCSD Sample ID: PLCSDW1-070731 Units: µg/L Analysis Date: 07/31/07 23:08

Client ID: Run ID: ECD_5_070730B SeqNo: 1181277 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4609	0.10	0.5	0	92.2	53-144	0.4638	0.616	30	
4,4'-DDE	0.4834	0.10	0.5	0	96.7	55-144	0.4865	0.643	30	
4,4'-DDT	0.4826	0.10	0.5	0	96.5	53-149	0.4745	1.69	30	
Aldrin	0.2279	0.050	0.25	0	91.2	47-141	0.2298	0.821	30	
alpha-BHC	0.2329	0.050	0.25	0	93.2	51-141	0.2358	1.23	30	
beta-BHC	0.2348	0.050	0.25	0	93.9	58-144	0.2374	1.1	30	
delta-BHC	0.2355	0.050	0.25	0	94.2	48-146	0.2378	0.968	30	P
Dieldrin	0.4716	0.10	0.5	0	94.3	56-144	0.475	0.714	30	
Endosulfan I	0.2367	0.050	0.25	0	94.7	55-141	0.2384	0.724	30	
Endosulfan II	0.557	0.10	0.5	0	111	57-144	0.5479	1.65	30	
Endosulfan sulfate	0.5051	0.10	0.5	0	101	58-145	0.5084	0.661	30	
Endrin	0.5212	0.10	0.5	0	104	60-163	0.5267	1.05	30	
Endrin aldehyde	0.5033	0.10	0.5	0	101	59-158	0.5041	0.167	30	
Endrin ketone	0.5134	0.10	0.5	0	103	59-154	0.5185	0.987	30	
gamma-BHC	0.2344	0.050	0.25	0	93.8	53-142	0.2359	0.642	30	
Heptachlor	0.2474	0.050	0.25	0	99	51-144	0.2471	0.121	30	P
Heptachlor epoxide	0.2332	0.050	0.25	0	93.3	55-142	0.2345	0.539	30	
Methoxychlor	2.621	0.50	2.5	0	105	59-150	2.654	1.24	30	
Surr: Decachlorobiphenyl	0.2177	0.10	0.2	0	109	61-154	0.2182	0.262	30	
Surr: Tetrachloro-m-xylene	0.1916	0.050	0.2	0	95.8	60-144	0.1924	0.391	30	

The following samples were analyzed in this batch:

0707698-01F

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24869 Instrument ID ECD_7 Method: SW8082

MBLK Sample ID: PBLKW2-070731 Units: µg/L Analysis Date: 08/01/07 19:31

Client ID: Run ID: ECD_7_070801A SeqNo: 1181899 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	0.1882	0.050	0.2	0	94.1	54-140	0			
Surr: Tetrachloro-m-xylene	0.1799	0.050	0.2	0	90	53-137	0			

LCS Sample ID: PLCSW2-070731 Units: µg/L Analysis Date: 08/01/07 20:05

Client ID: Run ID: ECD_7_070801A SeqNo: 1181900 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.22	0.50	5	0	84.4	54-138	0			
Aroclor 1260	4.129	0.50	5	0	82.6	57-136	0			
Surr: Decachlorobiphenyl	0.1781	0.050	0.2	0	89.1	54-140	0			
Surr: Tetrachloro-m-xylene	0.1757	0.050	0.2	0	87.8	53-137	0			

LCSD Sample ID: PLCSDW2-070731 Units: µg/L Analysis Date: 08/01/07 20:39

Client ID: Run ID: ECD_7_070801A SeqNo: 1181901 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3.995	0.50	5	0	79.9	54-138	4.22	5.49	20	
Aroclor 1260	3.856	0.50	5	0	77.1	57-136	4.129	6.85	20	
Surr: Decachlorobiphenyl	0.1662	0.050	0.2	0	83.1	54-140	0.1781	6.9	20	
Surr: Tetrachloro-m-xylene	0.1614	0.050	0.2	0	80.7	53-137	0.1757	8.45	20	

The following samples were analyzed in this batch:

0707698-01F

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24856 Instrument ID Mercury Method: SW7470

MBLK Sample ID: GBLKW3-073107 Units: mg/L Analysis Date: 07/31/07 17:37

Client ID: Run ID: MERCURY_070731C SeqNo: 1180728 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: GLCSW3-073107 Units: mg/L Analysis Date: 07/31/07 17:45

Client ID: Run ID: MERCURY_070731C SeqNo: 1180729 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00445	0.00020	0.005	0	89	85-115	0			

LCSD Sample ID: GLCSDW3-073107 Units: mg/L Analysis Date: 07/31/07 17:47

Client ID: Run ID: MERCURY_070731C SeqNo: 1180730 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0044	0.00020	0.005	0	88	85-115	0.00445	1.13	20	

MS Sample ID: 0707684-01AMS Units: mg/L Analysis Date: 07/31/07 17:53

Client ID: Run ID: MERCURY_070731C SeqNo: 1180733 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.00020	0.005	-0.000023	102	85-115	0			

MSD Sample ID: 0707684-01AMSD Units: mg/L Analysis Date: 07/31/07 17:55

Client ID: Run ID: MERCURY_070731C SeqNo: 1180734 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00514	0.00020	0.005	-0.000023	103	85-115	0.00508	1.17	20	

DUP Sample ID: 0707684-01ADUP Units: mg/L Analysis Date: 07/31/07 17:51

Client ID: Run ID: MERCURY_070731C SeqNo: 1180732 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	-0.000023	0	20	

The following samples were analyzed in this batch:

0707698-01D

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24877 Instrument ID ICPMS02 Method: SW6020

MBLK Sample ID: MBLKW1-080107 Units: mg/L Analysis Date: 08/01/07 18:55

Client ID: Run ID: ICPMS02_070801A SeqNo: 1181823 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								

MBLK Sample ID: MBLKW1-080107 Units: mg/L Analysis Date: 08/02/07 12:37

Client ID: Run ID: ICPMS03_070802A SeqNo: 1182318 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Boron	0.01322	0.020								J
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Selenium	ND	0.0050								
Silver	ND	0.0050								
Sodium	ND	0.20								
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

LCS Sample ID: MLCSW1-080107 Units: mg/L Analysis Date: 08/01/07 19:01

Client ID: Run ID: ICPMS02_070801A SeqNo: 1181824 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.04976	0.010	0.05	0	99.5	80-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

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R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24877 Instrument ID ICPMS02 Method: SW6020

LCS Sample ID: MLCSW1-080107 Units: mg/L Analysis Date: 08/02/07 12:31

Client ID: Run ID: ICPMS03_070802A SeqNo: 1182317 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05578	0.0050	0.05	0	112	80-120	0			
Barium	0.05006	0.0050	0.05	0	100	80-120	0			
Beryllium	0.05215	0.0020	0.05	0	104	80-120	0			
Boron	0.5317	0.020	0.5	0	106	80-120	0			
Cadmium	0.05111	0.0020	0.05	0	102	80-120	0			
Calcium	4.596	0.50	5	0	91.9	80-120	0			
Chromium	0.05584	0.0050	0.05	0	112	80-120	0			
Cobalt	0.05972	0.0050	0.05	0	119	80-120	0			
Copper	0.0502	0.0050	0.05	0	100	80-120	0			
Iron	5.089	0.20	5	0	102	80-120	0			
Lead	0.05021	0.0050	0.05	0	100	80-120	0			
Magnesium	4.97	0.20	5	0	99.4	80-120	0			
Manganese	0.0572	0.0050	0.05	0	114	80-120	0			
Molybdenum	0.04909	0.0050	0.05	0	98.2	80-120	0			
Nickel	0.05045	0.0050	0.05	0	101	80-120	0			
Potassium	4.856	0.20	5	0	97.1	80-120	0			
Selenium	0.05115	0.0050	0.05	0	102	80-120	0			
Silver	0.05025	0.0050	0.05	0	100	80-120	0			
Sodium	4.951	0.20	5	0	99	80-120	0			
Vanadium	0.05775	0.0050	0.05	0	116	80-120	0			
Zinc	0.05442	0.0050	0.05	0	109	80-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24877 Instrument ID ICPMS02 Method: SW6020

MS Sample ID: 0707719-04BMS Units: mg/L Analysis Date: 08/01/07 22:03

Client ID: Run ID: ICPMS02_070801A SeqNo: 1181847 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	5.02	0.010	0.05	4.876	288	80-120	0			SEO
Arsenic	0.04901	0.0050	0.05	0.003378	91.3	80-120	0			
Barium	0.1098	0.0050	0.05	0.06249	94.6	80-120	0			
Cadmium	0.04535	0.0020	0.05	0.0003898	89.9	80-120	0			
Calcium	100.4	0.50	5	93.79	132	80-120	0			SO
Chromium	0.04835	0.0050	0.05	0.004904	86.9	80-120	0			
Cobalt	0.04698	0.0050	0.05	0.00215	89.7	80-120	0			
Copper	0.04459	0.0050	0.05	0.00424	80.7	80-120	0			
Iron	8.07	0.20	5	3.521	91	80-120	0			
Lead	0.0489	0.0050	0.05	0.00253	92.7	80-120	0			
Magnesium	51.73	0.20	5	46.52	104	80-120	0			O
Manganese	0.4352	0.0050	0.05	0.3796	111	80-120	0			O
Molybdenum	0.05035	0.0050	0.05	0.005089	90.5	80-120	0			
Nickel	0.05002	0.0050	0.05	0.008902	82.2	80-120	0			
Potassium	6.713	0.20	5	2.293	88.4	80-120	0			
Selenium	0.04833	0.0050	0.05	0.001666	93.3	80-120	0			
Silver	0.04092	0.0050	0.05	0.00008957	81.7	80-120	0			
Sodium	287.6	0.20	5	276.7	218	80-120	0			SEO
Vanadium	0.06384	0.0050	0.05	0.01663	94.4	80-120	0			
Zinc	0.06179	0.0050	0.05	0.0175	88.6	80-120	0			

MS Sample ID: 0707719-04BMS Units: mg/L Analysis Date: 08/02/07 17:11

Client ID: Run ID: ICPMS02_070802A SeqNo: 1182560 Prep Date: 8/1/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.04938	0.0020	0.05	0.000807	97.1	80-120	0			
Boron	0.8771	0.020	0.5	0.3533	105	80-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **24877** Instrument ID **ICPMS02** Method: **SW6020**

MSD		Sample ID: 0707719-04BMSD				Units: mg/L		Analysis Date: 08/01/07 22:09		
Client ID:		Run ID: ICPMS02_070801A			SeqNo: 1181848		Prep Date: 8/1/2007		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	5.399	0.010	0.05	4.876	1050	80-120	5.02	7.28	15	SEO
Arsenic	0.04807	0.0050	0.05	0.003378	89.4	80-120	0.04901	1.94	15	
Barium	0.1117	0.0050	0.05	0.06249	98.4	80-120	0.1098	1.72	15	
Cadmium	0.04471	0.0020	0.05	0.0003898	88.6	80-120	0.04535	1.42	15	
Calcium	102	0.50	5	93.79	164	80-120	100.4	1.58	15	SEO
Chromium	0.05009	0.0050	0.05	0.004904	90.4	80-120	0.04835	3.54	15	
Cobalt	0.04844	0.0050	0.05	0.00215	92.6	80-120	0.04698	3.06	15	
Copper	0.04579	0.0050	0.05	0.00424	83.1	80-120	0.04459	2.66	15	
Iron	8.237	0.20	5	3.521	94.3	80-120	8.07	2.05	15	
Lead	0.04943	0.0050	0.05	0.00253	93.8	80-120	0.0489	1.08	15	
Magnesium	52.4	0.20	5	46.52	118	80-120	51.73	1.29	15	O
Manganese	0.4464	0.0050	0.05	0.3796	134	80-120	0.4352	2.54	15	SO
Molybdenum	0.05134	0.0050	0.05	0.005089	92.5	80-120	0.05035	1.95	15	
Nickel	0.05106	0.0050	0.05	0.008902	84.3	80-120	0.05002	2.06	15	
Potassium	6.913	0.20	5	2.293	92.4	80-120	6.713	2.94	15	
Selenium	0.0499	0.0050	0.05	0.001666	96.5	80-120	0.04833	3.2	15	
Silver	0.04181	0.0050	0.05	0.00008957	83.4	80-120	0.04092	2.15	15	
Sodium	292.1	0.20	5	276.7	308	80-120	287.6	1.55	15	SEO
Vanadium	0.06616	0.0050	0.05	0.01663	99.1	80-120	0.06384	3.57	15	
Zinc	0.08042	0.0050	0.05	0.0175	126	80-120	0.06179	26.2	15	SR

MSD		Sample ID: 0707719-04BMSD				Units: mg/L		Analysis Date: 08/02/07 17:18		
Client ID:		Run ID: ICPMS02_070802A			SeqNo: 1182561		Prep Date: 8/1/2007		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.05075	0.0020	0.05	0.000807	99.9	80-120	0.04938	2.74	15	
Boron	0.9225	0.020	0.5	0.3533	114	80-120	0.8771	5.05	15	

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24877 Instrument ID ICPMS02 Method: SW6020

DUP		Sample ID: 0707719-04BDUP				Units: mg/L		Analysis Date: 08/01/07 21:51		
Client ID:		Run ID: ICPMS02_070801A				SeqNo: 1181845		Prep Date: 8/1/2007		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.003144	0.0050	0	0	0	0-0	0.003378	0	25	J
Barium	0.05957	0.0050	0	0	0	0-0	0.06249	4.78	25	
Cadmium	0.0003682	0.0020	0	0	0	0-0	0.0003898	0	25	J
Calcium	90.47	0.50	0	0	0	0-0	93.79	3.6	25	
Chromium	0.004693	0.0050	0	0	0	0-0	0.004904	0	25	J
Cobalt	0.002137	0.0050	0	0	0	0-0	0.00215	0	25	J
Copper	0.003877	0.0050	0	0	0	0-0	0.00424	0	25	J
Iron	3.359	0.20	0	0	0	0-0	3.521	4.71	25	
Lead	0.002502	0.0050	0	0	0	0-0	0.00253	0	25	J
Magnesium	45.05	0.20	0	0	0	0-0	46.52	3.21	25	
Manganese	0.372	0.0050	0	0	0	0-0	0.3796	2.02	25	
Molybdenum	0.00505	0.0050	0	0	0	0-0	0.005089	0.769	25	
Nickel	0.008732	0.0050	0	0	0	0-0	0.008902	1.93	25	
Potassium	2.181	0.20	0	0	0	0-0	2.293	5.01	25	
Selenium	ND	0.0050	0	0	0	0-0	0.001666	0	25	
Silver	ND	0.0050	0	0	0	0-0	0.00008957	0	25	
Vanadium	0.016	0.0050	0	0	0	0-0	0.01663	3.86	25	
Zinc	0.0175	0.0050	0	0	0	0-0	0.0175	0	25	

DUP		Sample ID: 0707719-04BDUP				Units: mg/L		Analysis Date: 08/02/07 11:44		
Client ID:		Run ID: ICPMS02_070801A				SeqNo: 1182130		Prep Date: 8/1/2007		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	5.194	1.0	0	0	0	0-0	5.227	0.633	25	
Sodium	336.1	20	0	0	0	0-0	361.9	7.39	25	

DUP		Sample ID: 0707719-04BDUP				Units: mg/L		Analysis Date: 08/02/07 16:39		
Client ID:		Run ID: ICPMS02_070802A				SeqNo: 1182556		Prep Date: 8/1/2007		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.000327	0.0020	0	0	0	0-0	0.0004407	0	25	J
Boron	0.3826	0.020	0	0	0	0-0	0.3821	0.131	25	

The following samples were analyzed in this batch:

0707698-01D

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected.

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **24867** Instrument ID **SV-3** Method: **SW8270**

MBLK Sample ID: **SBLKW1-070731** Units: **µg/L** Analysis Date: **08/01/07 10:29**

Client ID: Run ID: **SV-3_070801A** SeqNo: **1181465** Prep Date: **7/31/2007** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
2-Nitroaniline	ND	5.0								
2-Nitrophenol	ND	5.0								
3&4-Methylphenol	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
4-Nitrophenol	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Aniline	ND	5.0								
Anthracene	ND	5.0								
Benz(a)anthracene	ND	5.0								
Benzidine	ND	5.0								
Hexachloroethane	ND	5.0								
Indeno(1,2,3-cd)pyrene	ND	5.0								
Isophorone	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
Naphthalene	ND	5.0								
Nitrobenzene	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenanthrene	ND	5.0								
Phenol	ND	5.0								
Pyrene	ND	5.0								
Surr: 2,4,6-Tribromophenol	58.27	5.0	100	0	58.3	42-124	0			
Surr: 2-Fluorobiphenyl	62.41	5.0	100	0	62.4	48-120	0			
Surr: 2-Fluorophenol	56.8	5.0	100	0	56.8	20-120	0			
Surr: 4-Terphenyl-d14	58.01	5.0	100	0	58	51-135	0			
Surr: Nitrobenzene-d5	60.31	5.0	100	0	60.3	41-120	0			
Surr: Phenol-d6	59.86	5.0	100	0	59.9	20-120	0			

ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24867 Instrument ID SV-3 Method: SW8270

LCS Sample ID: SLCSW1-070731 Units: µg/L Analysis Date: 08/01/07 10:56

Client ID: Run ID: SV-3_070801A SeqNo: 1181466 Prep Date: 7/31/2007 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	42.02	5.0	50	0	84	54-118	0			
2,4,5-Trichlorophenol	86.49	5.0	100	0	86.5	52-115	0			
2,4,6-Trichlorophenol	83.17	5.0	100	0	83.2	56-115	0			
2-Methylnaphthalene	44.06	5.0	50	0	88.1	46-117	0			
2-Methylphenol	82.27	5.0	100	0	82.3	53-115	0			
2-Nitroaniline	51.74	5.0	50	0	103	53-123	0			
2-Nitrophenol	79.68	5.0	100	0	79.7	53-115	0			
3&4-Methylphenol	121.6	5.0	150	0	81.1	48-115	0			
3-Nitroaniline	34.5	5.0	50	0	69	26-115	0			
4-Nitroaniline	43	5.0	50	0	86	47-115	0			
4-Nitrophenol	79.49	5.0	100	0	79.5	26-133	0			
Acenaphthene	43.06	5.0	50	0	86.1	57-115	0			
Acenaphthylene	42.69	5.0	50	0	85.4	57-118	0			
Aniline	35.19	5.0	50	0	70.4	36-115	0			
Anthracene	45.38	5.0	50	0	90.8	65-115	0			
Benz(a)anthracene	44.25	5.0	50	0	88.5	53-115	0			
Benzidine	37.04	5.0	50	0	74.1	10-115	0			
Hexachloroethane	36.71	5.0	50	0	73.4	54-115	0			
Indeno(1,2,3-cd)pyrene	42.79	5.0	50	0	85.6	51-115	0			
Isophorone	44.44	5.0	50	0	88.9	55-115	0			
N-Nitrosodi-n-propylamine	44.73	5.0	50	0	89.5	55-115	0			
N-Nitrosodimethylamine	36.88	5.0	50	0	73.8	42-115	0			
N-Nitrosodiphenylamine	44.49	5.0	50	0	89	52-115	0			
Naphthalene	41.59	5.0	50	0	83.2	55-115	0			
Nitrobenzene	39.96	5.0	50	0	79.9	40-124	0			
Pentachlorophenol	90.54	5.0	100	0	90.5	45-125	0			
Phenanthrene	44.71	5.0	50	0	89.4	57-115	0			
Phenol	77.17	5.0	100	0	77.2	38-115	0			
Pyrene	45.16	5.0	50	0	90.3	51-115	0			
Surr: 2,4,6-Tribromophenol	80.68	5.0	100	0	80.7	42-124	0			
Surr: 2-Fluorobiphenyl	75.49	5.0	100	0	75.5	48-120	0			
Surr: 2-Fluorophenol	68.78	5.0	100	0	68.8	20-120	0			
Surr: 4-Terphenyl-d14	79.18	5.0	100	0	79.2	51-135	0			
Surr: Nitrobenzene-d5	72.83	5.0	100	0	72.8	41-120	0			
Surr: Phenol-d6	76.86	5.0	100	0	76.9	20-120	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: 24867 Instrument ID SV-3 Method: SW8270

LCSD		Sample ID: SLCSDW1-070731		Units: µg/L		Analysis Date: 08/01/07 11:24				
Client ID:		Run ID: SV-3_070801A		SeqNo: 1181467		Prep Date: 7/31/2007		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	42.09	5.0	50	0	84.2	54-118	42.02	0.162	20	
2,4,5-Trichlorophenol	87.66	5.0	100	0	87.7	52-115	86.49	1.34	20	
2,4,6-Trichlorophenol	82.66	5.0	100	0	82.7	56-115	83.17	0.619	20	
2-Methylnaphthalene	42.09	5.0	50	0	84.2	46-117	44.06	4.57	20	
2-Methylphenol	83.34	5.0	100	0	83.3	53-115	82.27	1.3	20	
2-Nitroaniline	52.58	5.0	50	0	105	53-123	51.74	1.61	20	
2-Nitrophenol	81.49	5.0	100	0	81.5	53-115	79.68	2.24	20	
3&4-Methylphenol	119.8	5.0	150	0	79.9	48-115	121.6	1.47	20	
3-Nitroaniline	35.74	5.0	50	0	71.5	26-115	34.5	3.53	20	
4-Nitroaniline	44.88	5.0	50	0	89.8	47-115	43	4.28	20	
4-Nitrophenol	87.53	5.0	100	0	87.5	26-133	79.49	9.63	20	
Acenaphthene	44.08	5.0	50	0	88.2	57-115	43.06	2.33	20	
Acenaphthylene	42.64	5.0	50	0	85.3	57-118	42.69	0.108	20	
Aniline	33.46	5.0	50	0	66.9	36-115	35.19	5.04	20	
Anthracene	44.09	5.0	50	0	88.2	65-115	45.38	2.89	20	
Benz(a)anthracene	44.3	5.0	50	0	88.6	53-115	44.25	0.118	20	
Benzidine	38.48	5.0	50	0	77	10-115	37.04	3.82	20	
Hexachloroethane	39.87	5.0	50	0	79.7	54-115	36.71	8.24	20	
Indeno(1,2,3-cd)pyrene	43.62	5.0	50	0	87.2	51-115	42.79	1.94	20	
Isophorone	42.46	5.0	50	0	84.9	55-115	44.44	4.56	20	
N-Nitrosodi-n-propylamine	41.1	5.0	50	0	82.2	55-115	44.73	8.45	20	
N-Nitrosodimethylamine	36.64	5.0	50	0	73.3	42-115	36.88	0.654	20	
N-Nitrosodiphenylamine	44.1	5.0	50	0	88.2	52-115	44.49	0.873	20	
Naphthalene	42.29	5.0	50	0	84.6	55-115	41.59	1.67	20	
Nitrobenzene	41.75	5.0	50	0	83.5	40-124	39.96	4.39	20	
Pentachlorophenol	90.32	5.0	100	0	90.3	45-125	90.54	0.241	20	
Phenanthrene	44.26	5.0	50	0	88.5	57-115	44.71	1.02	20	
Phenol	77.47	5.0	100	0	77.5	38-115	77.17	0.396	20	
Pyrene	45.19	5.0	50	0	90.4	51-115	45.16	0.0775	20	
Surr: 2,4,6-Tribromophenol	80.56	5.0	100	0	80.6	42-124	80.68	0.148	20	
Surr: 2-Fluorobiphenyl	75.71	5.0	100	0	75.7	48-120	75.49	0.284	20	
Surr: 2-Fluorophenol	70.78	5.0	100	0	70.8	20-120	68.78	2.86	20	
Surr: 4-Terphenyl-d14	77.18	5.0	100	0	77.2	51-135	79.18	2.55	20	
Surr: Nitrobenzene-d5	74.43	5.0	100	0	74.4	41-120	72.83	2.18	20	
Surr: Phenol-d6	77.25	5.0	100	0	77.2	20-120	76.86	0.501	20	

The following samples were analyzed in this batch:

0707698-01G

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

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R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52888 Instrument ID VOA1 Method: SW8260

MBLK Sample ID: VBLKW-073107 Units: µg/L Analysis Date: 07/31/07 11:45

Client ID: Run ID: VOA1_070731C SeqNo: 1181360 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	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	47.9	5.0	50	0	95.8	70-125		0		
Surr: 4-Bromofluorobenzene	50.68	5.0	50	0	101	72-125		0		
Surr: Dibromofluoromethane	51.24	5.0	50	0	102	71-125		0		
Surr: Toluene-d8	51.33	5.0	50	0	103	75-125		0		

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52888** Instrument ID **VOA1** Method: **SW8260**

LCS Sample ID: **VLCSW-073107** Units: **µg/L** Analysis Date: **07/31/07 10:54**

Client ID: Run ID: **VOA1_070731C** SeqNo: **1181358** 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	53.6	5.0	50	0	107	80-120	0			
1,1,2,2-Tetrachloroethane	50.61	5.0	50	0	101	72-120	0			
1,1,2-Trichloroethane	51	5.0	50	0	102	80-120	0			
1,1-Dichloroethane	51	5.0	50	0	102	76-120	0			
1,1-Dichloroethene	50.73	5.0	50	0	101	73-124	0			
1,2-Dichloroethane	50.76	5.0	50	0	102	78-120	0			
2-Butanone	105.9	10	100	0	106	58-132	0			
2-Chloroethyl vinyl ether	103.5	10	100	0	103	74-120	0			
2-Hexanone	101.5	10	100	0	101	61-130	0			
4-Methyl-2-pentanone	101.8	10	100	0	102	65-127	0			
Acetone	102	10	100	0	102	59-137	0			
Benzene	48.66	5.0	50	0	97.3	73-121	0			
Bromodichloromethane	53.84	5.0	50	0	108	80-120	0			
Bromoform	49.44	5.0	50	0	98.9	79-120	0			
Bromomethane	57.27	5.0	50	0	115	66-137	0			
Carbon disulfide	105.8	10	100	0	106	68-141	0			
Carbon tetrachloride	51.34	5.0	50	0	103	75-124	0			
Chlorobenzene	50.53	5.0	50	0	101	80-120	0			
Chloroethane	53.46	5.0	50	0	107	76-121	0			
Chloroform	51.95	5.0	50	0	104	80-120	0			
Chloromethane	52.67	5.0	50	0	105	67-123	0			
cis-1,3-Dichloropropene	52.58	5.0	50	0	105	80-120	0			
Dibromochloromethane	48.91	5.0	50	0	97.8	80-120	0			
Ethylbenzene	50.82	5.0	50	0	102	80-120	0			
m,p-Xylene	99.14	10	100	0	99.1	78-121	0			
Methylene chloride	52.8	10	50	0	106	65-133	0			
Styrene	51.11	5.0	50	0	102	80-120	0			
Tetrachloroethene	47.95	5.0	50	0	95.9	79-120	0			
Toluene	48.68	5.0	50	0	97.4	80-120	0			
trans-1,3-Dichloropropene	51.41	5.0	50	0	103	80-120	0			
Trichloroethene	48.17	5.0	50	0	96.3	80-120	0			
Vinyl acetate	105.8	10	100	0	106	67-139	0			
Vinyl chloride	54.3	2.0	50	0	109	74-122	0			
Xylenes, Total	150	15	150	0	100	80-120	0			
Surr: 1,2-Dichloroethane-d4	51.47	5.0	50	0	103	70-125	0			
Surr: 4-Bromofluorobenzene	52.88	5.0	50	0	106	72-125	0			
Surr: Dibromofluoromethane	54.19	5.0	50	0	108	71-125	0			
Surr: Toluene-d8	51.88	5.0	50	0	104	75-125	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52888 Instrument ID VOA1 Method: SW8260

MS Sample ID: 0707660-10AMS Units: µg/L Analysis Date: 07/31/07 20:16

Client ID: Run ID: VOA1_070731C SeqNo: 1181366 Prep Date: DF: 10

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	482	50	500	0	96.4	80-120	0			
1,1,2,2-Tetrachloroethane	538.4	50	500	0	108	72-120	0			
1,1,2-Trichloroethane	518.1	50	500	0	104	80-120	0			
1,1-Dichloroethane	486.2	50	500	0	97.2	76-120	0			
1,1-Dichloroethene	437	50	500	0	87.4	73-124	0			
1,2-Dichloroethane	521.5	50	500	0	104	78-120	0			
2-Butanone	1157	100	1000	0	116	58-132	0			
2-Chloroethyl vinyl ether	ND	100	1000	0	0	74-120	0			S
2-Hexanone	1129	100	1000	0	113	61-130	0			
4-Methyl-2-pentanone	1139	100	1000	0	114	65-127	0			
Acetone	1106	100	1000	0	111	59-137	0			
Benzene	478.8	50	500	0	95.8	73-121	0			
Bromodichloromethane	536.9	50	500	0	107	80-120	0			
Bromoform	513.7	50	500	0	103	79-120	0			
Bromomethane	453.6	50	500	0	90.7	66-137	0			
Carbon disulfide	935.3	100	1000	0	93.5	68-141	0			
Carbon tetrachloride	475.1	50	500	0	95	75-124	0			
Chlorobenzene	472.9	50	500	0	94.6	80-120	0			
Chloroethane	457.7	50	500	0	91.5	76-121	0			
Chloroform	487.9	50	500	0	97.6	80-120	0			
Chloromethane	420	50	500	0	84	67-123	0			
cis-1,3-Dichloropropene	515.1	50	500	0	103	80-120	0			
Dibromochloromethane	494.3	50	500	0	98.9	80-120	0			
Ethylbenzene	440.3	50	500	0	88.1	80-120	0			
m,p-Xylene	867.3	100	1000	0	86.7	78-121	0			
Methylene chloride	494.1	100	500	0	98.8	65-133	0			
Styrene	485.5	50	500	0	97.1	80-120	0			
Tetrachloroethene	435.1	50	500	0	87	79-120	0			
Toluene	468.7	50	500	0	93.7	80-120	0			
trans-1,3-Dichloropropene	485	50	500	0	97	80-120	0			
Trichloroethene	472.4	50	500	0	94.5	80-120	0			
Vinyl acetate	1077	100	1000	0	108	67-139	0			
Vinyl chloride	423.8	20	500	0	84.8	74-122	0			
Xylenes, Total	1326	150	1500	0	88.4	80-120	0			
Surr: 1,2-Dichloroethane-d4	491.8	50	500	0	98.4	70-125	0			
Surr: 4-Bromofluorobenzene	514.1	50	500	0	103	72-125	0			
Surr: Dibromofluoromethane	503	50	500	0	101	71-125	0			
Surr: Toluene-d8	526.5	50	500	0	105	75-125	0			

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52888 Instrument ID VOA1 Method: SW8260

MSD		Sample ID: 0707660-10AMSD		Units: µg/L		Analysis Date: 07/31/07 20:41				
Client ID:		Run ID: VOA1_070731C		SeqNo: 1181367		Prep Date:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	484.2	50	500	0	96.8	80-120	482	0.457	20	
1,1,2,2-Tetrachloroethane	532.2	50	500	0	106	72-120	538.4	1.17	20	
1,1,2-Trichloroethane	501.8	50	500	0	100	80-120	518.1	3.18	20	
1,1-Dichloroethane	479.1	50	500	0	95.8	76-120	486.2	1.47	20	
1,1-Dichloroethene	457.2	50	500	0	91.4	73-124	437	4.52	20	
1,2-Dichloroethane	517.2	50	500	0	103	78-120	521.5	0.832	20	
2-Butanone	1171	100	1000	0	117	58-132	1157	1.2	20	
2-Chloroethyl vinyl ether	ND	100	1000	0	0	74-120	0	0	20	S
2-Hexanone	1071	100	1000	0	107	61-130	1129	5.3	20	
4-Methyl-2-pentanone	1096	100	1000	0	110	65-127	1139	3.87	20	
Acetone	1086	100	1000	0	109	59-137	1106	1.85	20	
Benzene	479	50	500	0	95.8	73-121	478.8	0.0566	20	
Bromodichloromethane	532	50	500	0	106	80-120	536.9	0.911	20	
Bromoform	506.5	50	500	0	101	79-120	513.7	1.42	20	
Bromomethane	481.8	50	500	0	96.4	66-137	453.6	6.05	20	
Carbon disulfide	930.6	100	1000	0	93.1	68-141	935.3	0.499	20	
Carbon tetrachloride	480	50	500	0	96	75-124	475.1	1.02	20	
Chlorobenzene	481.6	50	500	0	96.3	80-120	472.9	1.82	20	
Chloroethane	473.1	50	500	0	94.6	76-121	457.7	3.32	20	
Chloroform	486.9	50	500	0	97.4	80-120	487.9	0.201	20	
Chloromethane	436.2	50	500	0	87.2	67-123	420	3.8	20	
cis-1,3-Dichloropropene	501.9	50	500	0	100	80-120	515.1	2.61	20	
Dibromochloromethane	486.4	50	500	0	97.3	80-120	494.3	1.6	20	
Ethylbenzene	470.1	50	500	0	94	80-120	440.3	6.55	20	
m,p-Xylene	941.8	100	1000	0	94.2	78-121	867.3	8.24	20	
Methylene chloride	500.6	100	500	0	100	65-133	494.1	1.31	20	
Styrene	459.3	50	500	0	91.9	80-120	485.5	5.53	20	
Tetrachloroethene	448.7	50	500	0	89.7	79-120	435.1	3.09	20	
Toluene	462.8	50	500	0	92.6	80-120	468.7	1.28	20	
trans-1,3-Dichloropropene	474.3	50	500	0	94.9	80-120	485	2.24	20	
Trichloroethene	453.5	50	500	0	90.7	80-120	472.4	4.08	20	
Vinyl acetate	1032	100	1000	0	103	67-139	1077	4.28	20	
Vinyl chloride	460.8	20	500	0	92.2	74-122	423.8	8.36	20	
Xylenes, Total	1406	150	1500	0	93.8	80-120	1326	5.91	20	
Surr: 1,2-Dichloroethane-d4	491	50	500	0	98.2	70-125	491.8	0.168	20	
Surr: 4-Bromofluorobenzene	493.7	50	500	0	98.7	72-125	514.1	4.06	20	
Surr: Dibromofluoromethane	509.1	50	500	0	102	71-125	503	1.2	20	
Surr: Toluene-d8	497.4	50	500	0	99.5	75-125	526.5	5.69	20	

The following samples were analyzed in this batch:

0707698-01A

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52856 Instrument ID WetChem Method: E150.1

LCS	Sample ID: LCS				Units: pH units			Analysis Date: 07/31/07 0:00		
Client ID:		Run ID: WETCHEM_070731D			SeqNo: 1180553		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.02	0.10	6	0	100	90-110		0		

DUP	Sample ID: 0707698-01EDUP				Units: pH units			Analysis Date: 07/31/07 0:00		
Client ID: TK838		Run ID: WETCHEM_070731D			SeqNo: 1180555		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.89	0.10	0	0	0	0-0	6.87	0.291	20	H

The following samples were analyzed in this batch:

0707698-01E

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52860** Instrument ID **ICS3000** Method: **E300**

MBLK Sample ID: **WBLKW1-073107** Units: **mg/L** Analysis Date: **07/31/07 19:06**

Client ID: Run ID: **ICS3000_070731A** SeqNo: **1181285** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Sulfate	ND	0.50								
Nitrate/Nitrite (as N)	ND	0.10								
Surr: Selenate (surr)	5.177	0.10	5	0	104	85-115	0			

LCS Sample ID: **WLC5W1-073107/** Units: **mg/L** Analysis Date: **07/31/07 19:30**

Client ID: Run ID: **ICS3000_070731A** SeqNo: **1181286** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.5	0.50	20	0	102	90-110	0			
Fluoride	4.148	0.10	4	0	104	90-110	0			
Sulfate	20.55	0.50	20	0	103	90-110	0			
Nitrate/Nitrite (as N)	8.401	0.10	8	0	105	90-110	0			
Surr: Selenate (surr)	5.097	0.10	5	0	102	85-115	0			

MS Sample ID: **0707695-01BMS** Units: **mg/L** Analysis Date: **07/31/07 17:53**

Client ID: Run ID: **ICS3000_070731A** SeqNo: **1181280** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	80.08	0.50	10	72.46	76.3	80-120	0			SEO
Fluoride	4.498	0.10	2	2.538	98	80-120	0			
Sulfate	253.1	0.50	10	252.9	1.4	80-120	0			SEO
Nitrate/Nitrite (as N)	4.683	0.10	4	0.608	102	80-120	0			
Surr: Selenate (surr)	4.903	0.10	5	0	98.1	85-115	0			

MSD Sample ID: **0707695-01BMSD** Units: **mg/L** Analysis Date: **07/31/07 18:17**

Client ID: Run ID: **ICS3000_070731A** SeqNo: **1181283** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	79.7	0.50	10	72.46	72.4	80-120	80.08	0.478	20	SEO
Fluoride	4.515	0.10	2	2.538	98.8	80-120	4.498	0.377	20	
Sulfate	252.1	0.50	10	252.9	-8.01	80-120	253.1	0.373	20	SEO
Nitrate/Nitrite (as N)	4.687	0.10	4	0.608	102	80-120	4.683	0.0854	20	
Surr: Selenate (surr)	4.893	0.10	5	0	97.9	85-115	4.903	0.204	20	

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52860 Instrument ID ICS3000 Method: E300

DUP Sample ID: 0707695-01BDUP Units: mg/L Analysis Date: 07/31/07 17:29

Client ID: Run ID: ICS3000_070731A SeqNo: 1181276 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	71.5	0.50	0	0	0	0-0	72.46	1.32	20	E
Fluoride	2.503	0.10	0	0	0	0-0	2.538	1.39	20	
Sulfate	248.8	0.50	0	0	0	0-0	252.9	1.64	20	E
Nitrate/Nitrite (as N)	0.606	0.10	0	0	0	0-0	0.608	0.329	20	
Surr: Selenate (surr)	5.099	0.10	5	0	102	85-115	5.155	1.09	20	

The following samples were analyzed in this batch:

0707698-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52873** Instrument ID **Balance1** Method: **E160.2**

MBLK Sample ID: **BLANK** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731C** SeqNo: **1180987** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	ND	2.0								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731C** SeqNo: **1180988** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	96	2.0	100	0	96	78-120	0			

DUP Sample ID: **0707716-01BDUP** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731C** SeqNo: **1180976** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	15	2.0	0	0	0	0-0	16	6.45	20	

The following samples were analyzed in this batch:

0707698-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52874** Instrument ID **Balance1** Method: **E160.1** (**Dissolve**)

MBLK Sample ID: **BLK** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731D** SeqNo: **1180995** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	ND	10								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731D** SeqNo: **1180996** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	936	10	1000		0	93.6	85-115	0		

DUP Sample ID: **0707716-02ADUP** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **BALANCE1_070731D** SeqNo: **1180994** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	1231	10	0		0	0	0-0	1271	3.2	20

The following samples were analyzed in this batch:

0707698-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52877** Instrument ID **WetChem** Method: **E410.4**

MBLK Sample ID: **WBLKW-080107** Units: **mg/L** Analysis Date: **08/01/07 0:00**

Client ID: Run ID: **WETCHEM_070801A** SeqNo: **1181064** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	15								

LCS Sample ID: **WLCSW-080107** Units: **mg/L** Analysis Date: **08/01/07 0:00**

Client ID: Run ID: **WETCHEM_070801A** SeqNo: **1181065** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	88	15	100	0	88	85-115	0			

MS Sample ID: **0707716-01AMS** Units: **mg/L** Analysis Date: **08/01/07 0:00**

Client ID: Run ID: **WETCHEM_070801A** SeqNo: **1181070** Prep Date: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	92	30	100	0	92	80-120	0			

DUP Sample ID: **0707716-01ADUP** Units: **mg/L** Analysis Date: **08/01/07 0:00**

Client ID: Run ID: **WETCHEM_070801A** SeqNo: **1181069** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	15	0	0	0	0-0	0	0	20	

The following samples were analyzed in this batch:

0707698-01B

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52886** Instrument ID **UV-2450** Method: **SM4500 NH3-**

MBLK Sample ID: **WBLKW1-073107** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731B** SeqNo: **1181315** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	ND	0.025								

LCS Sample ID: **WLCSW1-073107** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731B** SeqNo: **1181316** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.198	0.025	0.2	0	99	80-120	0			

MS Sample ID: **0707616-02BMS** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731B** SeqNo: **1181335** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.481	0.025	0.2	0.288	96.5	80-120	0			

DUP Sample ID: **0707616-02BDUP** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731B** SeqNo: **1181334** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.284	0.025	0	0	0	0-0	0.288	1.4	20	

The following samples were analyzed in this batch:

0707698-01B

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52887** Instrument ID **UV-2450** Method: **E420.1**

MBLK Sample ID: **WBLKW1-073107** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731C** SeqNo: **1181345** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050								

LCS Sample ID: **WLCSW1-073107** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: Run ID: **UV-2450_070731C** SeqNo: **1181346** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.476	0.050	0.5	0	95.2	80-120	0			

MS Sample ID: **0707698-01HMS** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: **TK838** Run ID: **UV-2450_070731C** SeqNo: **1181369** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.452	0.050	0.5	0.007	89	80-120	0			

DUP Sample ID: **0707698-01HDUP** Units: **mg/L** Analysis Date: **07/31/07 0:00**

Client ID: **TK838** Run ID: **UV-2450_070731C** SeqNo: **1181368** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050	0	0	0	0-0	0.007	0	20	

The following samples were analyzed in this batch:

0707698-01H

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
 Work Order: 0707698
 Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: R52922 Instrument ID WetChem Method: E310.1

MBLK	Sample ID: BLK				Units: mg/L			Analysis Date: 08/02/07 0:00		
Client ID:	Run ID: WETCHEM_070802A				SeqNo: 1182000		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0								
Alkalinity, Carbonate (As CaCO3)	ND	5.0								
Alkalinity, Hydroxide (As CaCO3)	ND	5.0								
Alkalinity, Total (As CaCO3)	ND	5.0								

LCS	Sample ID: LCS				Units: mg/L			Analysis Date: 08/02/07 0:00		
Client ID:	Run ID: WETCHEM_070802A				SeqNo: 1182001		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1011	5.0	1000	0	101	80-120	0			

DUP	Sample ID: 0708011-01BDUP					Units: mg/L		Analysis Date: 08/02/07 0:00		
Client ID:	Run ID: WETCHEM_070802A				SeqNo: 1182008		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	318.5	5.0	0	0	0	0-0	323.5	1.57	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	318.5	5.0	0	0	0	0-0	323.5	1.57	20	

The following samples were analyzed in this batch:

0707698-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R52936** Instrument ID **UV-2450** Method: **E335.3**

MBLK Sample ID: **WBLKW-080207** Units: **mg/L** Analysis Date: **08/02/07 0:00**

Client ID: Run ID: **UV-2450_070802A** SeqNo: **1182265** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020								

LCS Sample ID: **WLCSW-080207** Units: **mg/L** Analysis Date: **08/02/07 0:00**

Client ID: Run ID: **UV-2450_070802A** SeqNo: **1182266** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.194	0.020	0.2	0	97	80-120	0			

MS Sample ID: **0707698-01CMS** Units: **mg/L** Analysis Date: **08/02/07 0:00**

Client ID: **TK838** Run ID: **UV-2450_070802A** SeqNo: **1182275** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.184	0.020	0.2	-0.002	93	80-120	0			

DUP Sample ID: **0707698-01CDUP** Units: **mg/L** Analysis Date: **08/02/07 0:00**

Client ID: **TK838** Run ID: **UV-2450_070802A** SeqNo: **1182274** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	-0.002	0	20	

The following samples were analyzed in this batch:

0707698-01C

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0707698
Project: TK 838 Hydrotest #2

QC BATCH REPORT

Batch ID: **R53027** Instrument ID **WetChem** Method: **E405.1**

MBLK	Sample ID: WBLKW1-080107					Units: mg/L		Analysis Date: 08/01/07 0:00		
Client ID:	Run ID: WETCHEM_070801H				SeqNo: 1183926	Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	ND	2.0								

LCS	Sample ID: WLCSW1-080107					Units: mg/L		Analysis Date: 08/01/07 0:00		
Client ID:	Run ID: WETCHEM_070801H				SeqNo: 1183927		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	199	2.0	198	0	101	85-115	0			

LCSD	Sample ID: WLCSW1-080107					Units: mg/L		Analysis Date: 08/01/07 0:00		
Client ID:	Run ID: WETCHEM_070801H				SeqNo: 1183929		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	202	2.0	198	0	102	85-115	199	1.5	20	

The following samples were analyzed in this batch:

0707698-01E

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

O - Referenced analyte value is > 4 times amount spiked

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

P - Dual Column results percent difference > 40%

B - Analyte detected in assoc. Method Blank

U - Analyzed for but not detected

E - Value above quantitation range

The Chain of Custody is a Legal Document. All information must be completed accurately.

e-Lab Analytical, Inc.
3352 128th Avenue
Holland, Michigan 48033
(Tel) 616.399.6070
(Fax) 616.399.6185

[illegible]

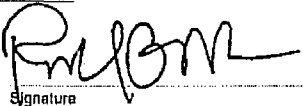
Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to e-Lab Analytical, Inc.
2. Unless otherwise agreed in a formal contract, services provided by e-Lab Analytical, Inc. are expressly limited to the terms and conditions stated on the reverse.

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Sample Receipt Checklist

Client Name: NAVAJO REFININGDate/Time Received: 7/31/2007 9:00:00 AMWork Order Number 0707698Received by: RDH

Checklist completed by



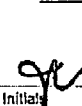
Signature

Date

7/31/07

Reviewed by

Initials



Date

7/31/07

Matrix:

LiquidCarrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.4c</u>	<u>002</u>	
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Adjusted? _____ Checked by _____

Login Notes: Split and preserve for Cyanide and Phenolics analysis.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

W.O.# 0707518

ORIGIN ID: ROWA (505) 748-3311
NAVAJO REFINING
NAVAJO REFINING COMPANY
501 E. MAIN STREET

Ship Date: 30JUL07
ActWgt: 50.0 LB/MAN
System#: 185697/CAFE2331
Account: 5 113684186

ARTESIA, NM 88210
UNITED STATES US

TO SAMPLE RECEIVING

ELAB

10450 STANCLIFF SUITE 210

HOUSTON, TX 77099

(281) 530-5556

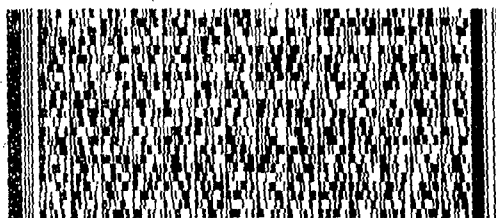
FedEx
Express



CL5022307/22/23

Ref:
INV:
PU:

Dupli



Delivery Address
Barcode

BILL RECIPIENT

STANDARD OVERNIGHT

TUE

Deliver By

31JUL07

TRK# 9391 8020 1614 Form 0201

IAH

A2

77099 -TX-US

XH JGQA

Part # 150148-434 NRIT 8-05



Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Monday, August 06, 2007 8:37 PM
To: Moore, Darrell; Chavez, Carl J, EMNRD
Cc: Lackey, Johnny; David Boyer
Subject: RE: 707698 TK 838 Hydrotest #2 Final/Invoice

Approved!

Wayne Price-Environmental Bureau Chief
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3490
Fax: 505-476-3462

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Mon 8/6/2007 2:12 PM
To: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Cc: Lackey, Johnny; David Boyer
Subject: FW: 707698 TK 838 Hydrotest #2 Final/Invoice

Wayne,

A week ago we asked for permission to discharge some hydrotest water from TK 838 to our farm even though the water was over the WQCC limit for iron. You approved that request, however, the tank failed the hydrotest so we had to empty the tank and repair the leak. We have now refilled the tank with fresh water and. lo and behold, it failed for iron again. As before we are asking to be allowed to discharge this water to our farm. Im confident that the high iron reading is from the metal in the tank. If you could reply to this e mail I would appreciate it.

Darrell Moore

From: Croston, Jeffrey [<mailto:jcroston@elabi.com>]
Sent: Monday, August 06, 2007 1:21 PM
To: Byrd, Jeff
Cc: Moore, Darrell
Subject: 707698 TK 838 Hydrotest #2 Final/Invoice

Jeff,

Please see the attached files that contain the results for your project and the invoice. No hardcopy version will be sent. Please let me know if you have any questions.

Thanks,
Jeff

Jeff Croston
Project Manager
e-Lab Analytical, Inc.

8/7/2007

10450 Stancliff Rd, Suite 210
Houston, Texas 77099
281-530-5656 (phone)
281-530-3053 (fax)
jcroston@elabi.com

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This inbound email has been scanned by the MessageLabs Email Security System.

8/7/2007

Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Tuesday, July 17, 2007 9:35 AM
To: Chavez, Carl J, EMNRD
Subject: FW: Discharge of Hydrotest Water

Please make sure this is put in their file

From: Price, Wayne, EMNRD
Sent: Tuesday, July 17, 2007 9:34 AM
To: 'Moore, Darrell'
Cc: Lackey, Johnny
Subject: RE: Discharge of Hydrotest Water

OCD hereby approves of this one time discharge.

Please be advised that OCD approval of this plan does not relieve the owner/operator of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]
Sent: Tuesday, July 17, 2007 9:15 AM
To: Price, Wayne, EMNRD
Cc: Lackey, Johnny
Subject: FW: Discharge of Hydrotest Water

Wayne

We really need an answer on this tank. The QA/QC that Carl refers to isn't even on OUR sample...it was done on a calibration sample. We can have our lab give you guys a call and talk with you about it.

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, July 12, 2007 4:51 PM
To: Moore, Darrell
Cc: Price, Wayne, EMNRD; Lackey, Johnny; VonGonten, Glenn, EMNRD
Subject: RE: Discharge of Hydrotest Water

Darrell:

I have reviewed the analytical and concur with your elevated [Fe] above the WQCC Standard. The Fe standard of 1 ppm is pretty low; however, I notice from QA/QC Reports at the back of the analytical data that the % Recovery of Fe was about 35%. Thus, I suspect that the detected [Fe] is lower than the true concentration.

Consequently, I am deferring the answer to your question to Mr. Wayne Price of the OCD for a decision. He will return to work on Tuesday, July 17, 2007. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.

7/25/2007

Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]
Sent: Thursday, July 12, 2007 1:40 PM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Lackey, Johnny
Subject: Discharge of Hydrotest Water

Carl

Attached is the analysis of hydrotest water we used to test TK 838. This tank had a wall collapse and we had to repair it and test it before we could put it into service. We would like to run this water to our farm. This is the same farm that the RO Reject water is sent to. You will notice that the analysis for Iron (Fe) is the only "hit" we have. Obviously, the iron content in the water came from the reaction of the water with the metal in the tank. We used fresh water for this hydrotest...straight out of the ground.

We are asking for permission to discharge this water to Navajo's farm for irrigation of crops.

Darrell Moore
Environmental Manager for Water and Waste
Navajo Refining Company, L.P.
P.O. Box 159
Artesia, NM 88211-0159
Darrell.moore@navajo-refining.com
phone: 505.746.5281
cell: 505.703.5058
fax: 505.746.5451

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This inbound email has been scanned by the MessageLabs Email Security System.

7/25/2007

Date 7-17-07 Telephone No. 505-395-2632

Submit one copy to Santa Fe
and one copy to appropriate
District Office postmarked by 24th
day of succeeding month.
See Rule 1131.

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

MONTHLY GAS STORAGE REPORT

Western Refining Company, L.P.
(Company)

PO Box 1345 Jal, New Mexico 88252
(Address)

NAME OF STORAGE PROJECT	Jal Terminal	COUNTY	Lea	Month/Year 06-07
-------------------------	--------------	--------	-----	------------------

WELL NAME AND NUMBER	LOCATION UNIT SEC. TWP. RANGE	MAXIMUM INJECTION PRESSURE	INJECTION (MCF)	WITHDRAWAL (MCF)
31055 State LPG Storage Well No. 2 30-025-35955	M32-23S-37E	830	31,928	0

TOTALS

TOTAL CAPACITY (MMCF)	<u>130,201 Barrels</u>
BEGINNING STORAGE (MMCF)	<u>14,494 Barrels</u>
NET CHANGE (MMCF)	<u>31,928 Barrels</u>
ENDING STORAGE (MMCF)	46,422 Barrels

CALCULATED RESERVOIR PRESSURE @ END
OF MONTH 958

I hereby certify that this report is true and complete to the best of my knowledge and belief.

Signature _____

Printed Name & Title Ken Parker, Manager

E-mail Address ken.parker@wnr.com

Date 7-17-07 Telephone No. 505-395-2632

Submit one copy to Santa Fe
and one copy to appropriate
District Office postmarked by 24th
day of succeeding month.
See Rule 1131.

Date 7-17-07 Telephone No. 505-395-2632

Submit one copy to Santa Fe
and one copy to appropriate
District Office postmarked by 24th
day of succeeding month.
See Rule 1131.

Date 7-17-07 Telephone No. 505-395-2632



REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING
(505) 746-5451 EXEC/MKTG
(505) 746-5421 ENGINEERING
(505) 746-5480 PIPELINE

June 7, 2007

John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau
2905 Rodeo Park Dr. E., Building 1
Santa Fe, NM 87505

**RE: Response to NMED Letter dated March 9, 2007;
WELL LOG INFORMATION
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID #NMD048918817
HWB-NRC-MISC**

Dear Mr. Kieling;

In response to the letter mentioned above Navajo Refining has been able to find thirteen additional well logs, see attached. Many of the wells listed date as far back as the 1970's and the associated reports are no longer found on file. In addition, the wells that are prefixed with RA are irrigation wells that we have no logs for. Finally, the RW designation is for the Recovery Wells which are really trenches. There are no "logs" for these trenches.

Also, please find the boring logs for the new wells that were installed at the Evaporation Ponds during the recent site investigation. Included with these is the well abandonment log for MW-1, also located at the ponds.

Please let Navajo know if you have any further questions.

Regards;
NAVAJO REFINING COMPANY

A handwritten signature in black ink that reads "Darrell Moore". The signature is written in a cursive, flowing style.

Darrell Moore
Environmental Manager for Water and Waste

cc; D. Cobrain, NMED HWB
H. Monseglio, NMED HWB
W. Price, NMOCD

JLB, JEL

Geologic Description		Monitoring Well Piezometer		Design Specifications				
	Start 1/14/95, 1000		Protective Casing YES	Elevations: 1 3309.37	2			
0-1'	Silt, light brown.			(feet MSL) 3 3308.89	4 3305.6			
1-2'	Silty sand, light brown			Coordinates: X 18314.15	Y 2775.59			
2-7.8'	Clay, dark brown with calcite crystals. Dry, stiff 4-5'			Bore Hole Diameter:(Inner) 8 1/4" (Outer) 12"				
7.8-8.2'	Sandy clay, light brown, moist.			Type of Casing:(Inner) <input checked="" type="checkbox"/> PVC Sched. 40 Flush Thread				
8.2-10'	Clayey silt, light brown, slight odor.			<input type="checkbox"/> Stainless Steel				
10-12'	Clay, light brown with light gray streaking, moist.			(Outer)				
12-12.8'	Sand, light brown with dark gray zones, strong HC odor.			Casing Diam.: (Inner) <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> 10"				
12.8-15'	No recovery. Added clean water to counteract flowing sand.			(Outer) <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> 10"				
15-20'	No recovery (inserted sand catcher).			Screen Slot: <input type="checkbox"/> 0.008 <input checked="" type="checkbox"/> 0.010				
17-20'	No recovery with sand catcher.			Screen Style: <input checked="" type="checkbox"/> Machine Slot <input type="checkbox"/> Wire Wrap				
20-25'	No recovery (omitted sand catcher).			Sand Pack:CSSI 16-40 silica sand				
25-25.6'	Sand, fine-grained light gray brown, HC odor.			Bentonite Seal: <input type="checkbox"/> 1/4" Pellets <input checked="" type="checkbox"/> 1/2" Pellets				
25.6-26.2'	Sand, very fine-grained, light brown.			<input type="checkbox"/> 1/2" Chips <input type="checkbox"/> Hole Plug				
26.2-26.6'	Gravelly clay, gray black grading to gravel, 1/8-3/8", HC odor.			Grout Type: 6% bentonite/Portland Weight:				
	(HC=Hydrocarbon.)			Drill Rig: <input checked="" type="checkbox"/> Hollow Stem <input type="checkbox"/> Rotary				
				Drilled by: Precision Engineering Lic.#:				
				Logged by: DGB/BPS				
				Completion Date: 1/18/95				
				Depth First Encountered Water: 12' BLS				
				Date	D-T-W D-T-P Prod Thick Field pH Field EC			
				1/20/95	10.79		7.5	6100
				2/4/95	10.50		---	---
				2/24/95	10.27		7.0	5000
				Comments: Flowing sand moved ≈15' into inner casing.				
				Purged 200 gallons 1/19/95 to clean and develop. D-T-W from casing lip.				
				RE/SPEC				
				MW-4C				
				>Page 1of 4<				
				Project: 318/3				
				Location: Artesia, New Mexico				

Geologic Description		Monitoring Well		Design Specifications	
		Piezometer			
		Protective Casing			
		YES			
1/18/95					
60-62'	No recovery.				
65-67'	18" (1.5') recovery.				
65-67.2'	Clayey gravel, brown, irregular, 1/4"-1 1/2", saturated, no odor.				
65.2-66.4'	Sand, medium to fine, brown, saturated.				
66.4-66.5'	Clay, brown, moist.				
70-72"	21.5" (1.8') recovery.				
70-70.1	Gravel (1/8"-1 1/2") and sand, saturated.				
70.1-71.8'	Sand, fine- to medium grained, light brown, saturated, no apparent HC odor.				
72					
74					
76					
78					
80					

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MW-4C

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Geologic Description				Monitoring Well Piezometer		X		Design Specifications	
Samp. Meth.	Log	Depth (feet)	<p>0-3' SAND, reddish brown, fine grained, white rootlets, dry, hard at 0-2', no odor.</p> <p>3-13' CLAYEY SAND, reddish brown, fine grained, roots at 3-5', white nodules at 3-7', dark gray coloration starting at 8', moist, hydrocarbon odor below 8', light to dark gray staining at 11.5-13', saturated at 11.5'.</p> <p>13-15' CLAY, reddish brown, gray coloration starting at 14', moist, soft, hydrocarbon odor.</p> <p>15-51' SAND, light gray to dark gray coloration, medium to coarse grained, interbedded clay seams (2" thick) at 16-18.5', some gravel starting at 23', saturated (heaving), hydrocarbon odor.</p> <p>TD = 51'</p>	Protective Casing <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	1 Cover (Closed) 2 Lip 3 Lip 4 Surface	Elevations: 1 <u>3306.18</u> 2 <u>3306.16</u> (feet MSL) 3 <u>3305.94</u> 4 <u>3303.30</u> Coordinates: X <u>19511.68</u> Y <u>2964.70</u> Bore Hole Diameter: (Inner) <u>8"</u> (Outer) <u>14"</u> Type of Casing: (Inner) <input checked="" type="checkbox"/> PVC Sched. 40 Flush Thread <input type="checkbox"/> Stainless Steel <input type="checkbox"/> (Outer) <input checked="" type="checkbox"/> PVC Sched. 40 Casing Diameter: (Inner) <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> (Outer) <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 6" <input type="checkbox"/> 10" Screen Slot: <input type="checkbox"/> 0.008 <input checked="" type="checkbox"/> 0.010 <input type="checkbox"/> Screen Style: <input checked="" type="checkbox"/> Machine Slot <input type="checkbox"/> Wire Wrap <input type="checkbox"/> Sand Pack: Colorado Silica 16-40 Bentonite Seal: <input type="checkbox"/> 1/4" Pellets <input checked="" type="checkbox"/> 1/2" Pellets <input type="checkbox"/> 1/2" Chips <input type="checkbox"/> Hole Plug <input type="checkbox"/> Grout Type: Portland/Bentonite Weight: _____ Drill Rig: <input checked="" type="checkbox"/> Hollow Stem <input type="checkbox"/> Rotary <input type="checkbox"/> Drilled By: Precision Engineering Lic. #: _____ Logged By: WCZ Completion Date: <u>12/16/92</u> Depth First Encountered Water: <u>11.5'</u> BLS			
RB		48							
C		32							
SS		26							
			<div style="display: flex; justify-content: space-between;"> <div> <p>Depths in Feet from Ground Surface (Not to Scale)</p> <p>LOG-7</p> </div> <div> </div> </div>						
			<div style="display: flex; justify-content: space-between;"> <div> <p>Sample Method Symbols</p> <p><input checked="" type="checkbox"/> RB=Recovery Barrel <input checked="" type="checkbox"/> 5' <input type="checkbox"/> <input checked="" type="checkbox"/> ST=Shelby Tube <input checked="" type="checkbox"/> SS=Split Spoon <input checked="" type="checkbox"/> C=Cutting</p> </div> <div> <p>Comments:</p> </div> </div>						
			Project: 622092005-110 (MW-5B) Location: Artesia, New Mexico						

Geologic Description				Monitoring Well Piezometer		Design Specifications	
Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)	Protective Casing	YES		
SS			-61			<p>Elevations: 1 3306.54 2 3303.7 (feet MSL) 3 3306.23 4 3303.7 Coordinates: X 19500.46 Y 2972.4</p> <p>Bore Hole Diameter: (Inner) 8 1/4" (Outer) 12"</p> <p>Type of Casing: (Inner) <input checked="" type="checkbox"/> PVC Sched. 40 Flush Thread <input type="checkbox"/> Stainless Steel (Outer)</p> <p>Casing Diam.: (Inner) <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> 10" (Outer) <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> 10"</p> <p>Screen Slot: <input type="checkbox"/> 0.008 <input type="checkbox"/> 0.010 <input checked="" type="checkbox"/> Wire Wrap</p> <p>Screen Style: <input checked="" type="checkbox"/> Machine Slot <input type="checkbox"/> Wire Wrap</p> <p>Sand Pack: CSSI 16-40 silica sand</p> <p>Bentonite Seal: <input type="checkbox"/> 1/4" Pellets <input checked="" type="checkbox"/> 1/2" Pellets <input type="checkbox"/> 1/2" Chips <input type="checkbox"/> Hole Plug</p> <p>Grout Type: 6% bentonite/Portland Weight: _____ Drill Rig: <input checked="" type="checkbox"/> Hollow Stem <input type="checkbox"/> Rotary Drilled by: Precision Engineering Lic.#: _____ Logged by: DGB/BPS Completion Date: 1/19/95 Depth First Encountered Water: ---</p>	
			-62				
			-64				
			-66				
SS			-68			<p>Depths in Feet from Ground Surface (Not to Scale) LOG - 1</p>	
			-70				
SS			-72				
<p>1/17/95 Drilled, set and cemented surface casing at 56'. No log kept--used adjacent MW-5B.</p> <p>1/19/95 60-62' No recovery. 65-67' 10" (0.8') recovery. Medium sand, brown, saturated, with grout dropped from base of outer casing. No hydrocarbon odor.</p> <p>70-72' 16" (1.3') recovery 70-70.2' Clay, reddish brown with black inclusions, no odor.</p> <p>70.2-71.3' Sand, medium to coarse, light brown with some fine gravels, slight odor.</p>						<p>Date D-T-W D-T-P Prod Thick Field pH Field EC</p> <p>1/20/95 10.22 7.5 4300</p> <p>2/4/95 8.19 7.0 4200</p> <p>2/24/95 7.98</p> <p>Comments: D-T-W from casing lip.</p>	
<p>Sample Method Symbols</p> <p>RB=Recovery Barrel <input type="checkbox"/> 5' <input type="checkbox"/></p> <p>ST=Shelby Tube <input checked="" type="checkbox"/> SS=Split Spoon C=Cutting</p>				<p>RE/SPEC</p> <p></p> <p>MW-5C</p>		<p>Project: 318/3 Location: Artesia, New Mexico</p>	

Geologic Description				Monitoring Well		Design Specifications	
Samp. Meth.	Samp. Log	PID (ppm)	Depth (Feet)	Piezometer			
			0-0.5'		X		
			2		YES		
			4				
			5-11'				
			6				
			8				
			11-13'				
			10				
			13-15'				
			12				
			15-15.7'				
			14				
			15.7-19'				
			16				
			19-20.5'				
			18				
			20.5-23.5'				
			20				
			25				
			26				
			23.5-25'				
			28				
			30				

Geologic Description:

0-0.5' Clayey silt, topsoil with some sand and roots.

0.5-5' Silty clay, dark brown with calcite streaking and inclusions, with very fine sand 3-5'.

5-11' Clay, brown with calcite crystals, stiff, slightly moist, plastic, no odor (structure with crystals is like sandy clay-granular).

11-13' Clayey silt, light brown, some caliche, soft, moist, some fine gravel at 13'.

13-15' Clay, brown with zones of light gray.

15-15.7' Gravely clay with caliche, gray, saturated.

15.7-19' Clay, reddish brown, with zones of saturation, otherwise stiff plastic.

19-20.5' Clay and caliche gravel, saturated, no odor. 6" clay, brown at 19.5'.

20.5-23.5' Sandy silt, light brown, some clay. Very fine-grained sands at 23', saturated, no odor.

23.5-25' No recovery.

Monitoring Well: ☒ Monitoring Well

Piezometer: ☐ Piezometer

Protective Casing: ☐ YES

1 Cover (Closed)

2 Lip

3 Lip

4 Surface

24.25

25

24.5

15.25

13.1

11.7

Depths in Feet from Ground Surface (Not to Scale)

LOG - 1

Design Specifications:

Elevations: 1 3314.56 2 3311.4 (feet MSL) 3 3314.30 4 4889.12

Coordinates: X 13109.14 Y 4889.12

Bore Hole Diameter: 8 1/4"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel

Casing Diameter: ☒ 2" ☐ 4" ☐ 6"

Screen Slot: ☐ 0.008 ☒ 0.010

Screen Style: ☒ Machine Slot ☐ Wire Wrap

Sand Pack: CSSI 16-40 silica sand

Bentonite Seal: ☐ 1/4" Pellets ☒ 1/2" Pellets ☐ 1/2" Chips ☐ Hole Plug

(No water added for hydration.)

Grout Type: 6% bentonite/Portland Weight: _____

Drill Rig: ☒ Hollow Stem ☐ Rotary

Drilled by: Precision Engineering Lic. #: _____

Logged by: DGB

Completion Date: 1/13/95

Depth First Encountered Water: 15 ft. BLS

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
1/13/95	---			7	7900
1/15/95	11.77			7	8200
2/5/95	11.58				

Comments: Purged 100 gallons to clean and develop, 1/13

D-T-W from casing lip.

RE/SPEC


MW-26

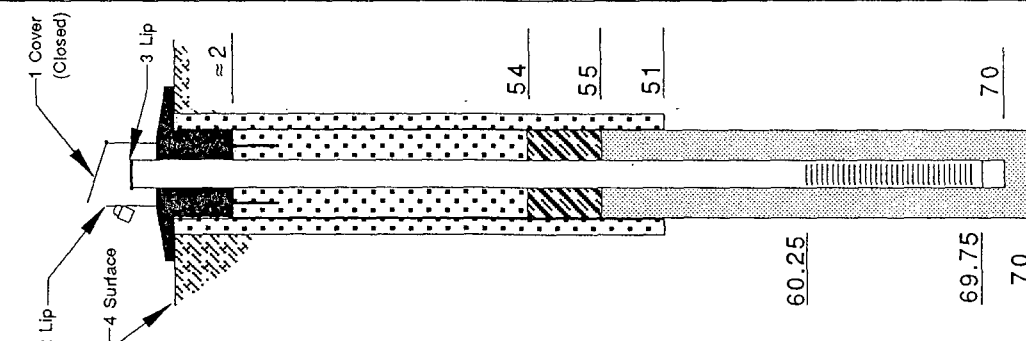
Project: 318/3

Location: Artesia, New Mexico

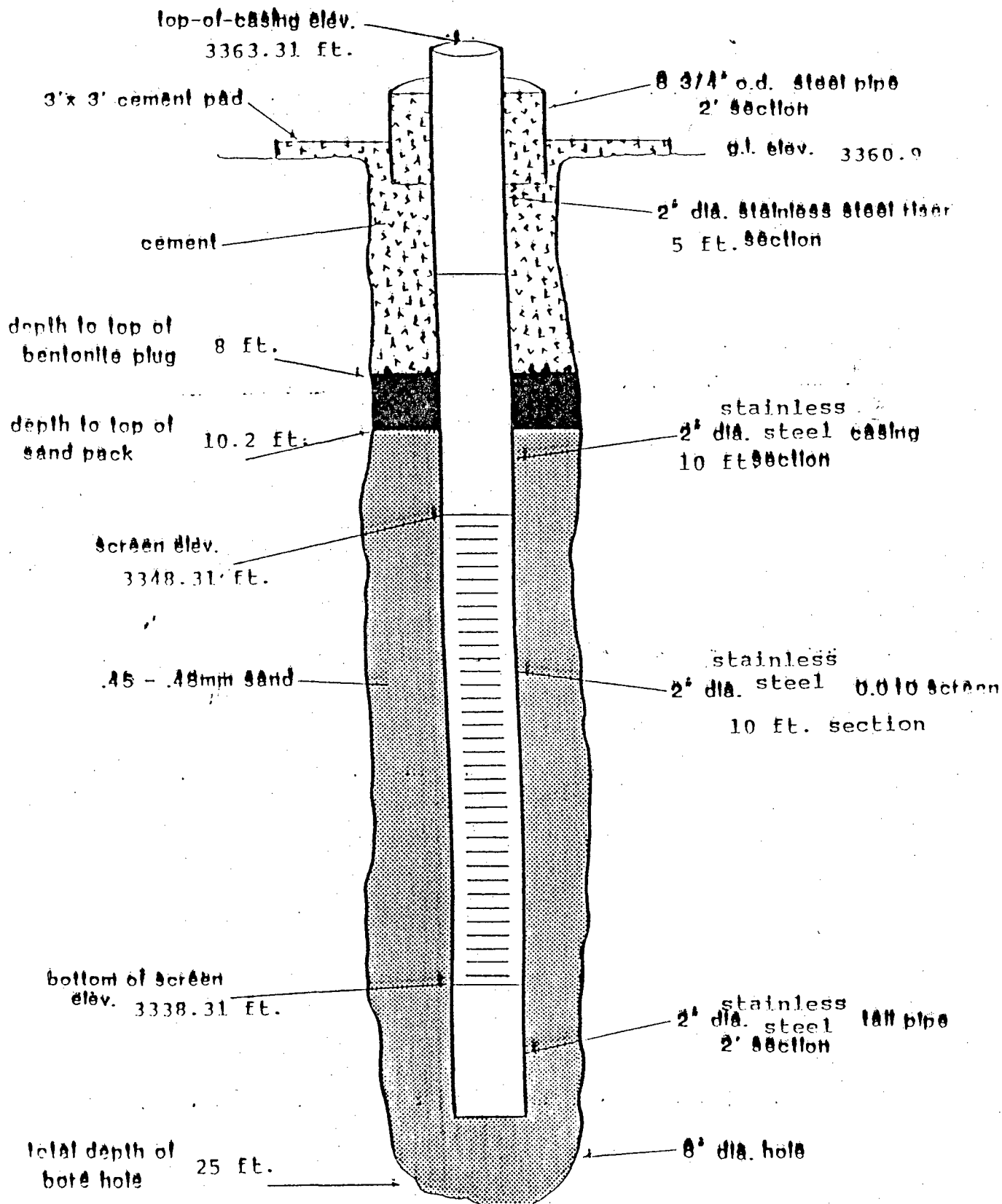
Geologic Description				Monitoring Well Piezometer		X		Design Specifications			
Somp. Meth.	Somp. Log	P.D. (ppm)	Depth (feet)	<div style="display: flex; justify-content: space-around;"> <div> Protective Casing <input checked="" type="checkbox"/> 2 Lip <input checked="" type="checkbox"/> 4 Surface <input checked="" type="checkbox"/> 3 Lip <input checked="" type="checkbox"/> 1 Cover (Closed) </div> <div> YES <input checked="" type="checkbox"/> </div> </div>		Elevations: 1 <u>3308.10</u> 2 <u>3308.08</u> (feet MSL) 3 <u>3307.05</u> 4 <u>3304.50</u> Coordinates: X <u>20834.63</u> Y <u>4870.19</u> Bore Hole Diameter: <u>12"</u> Type of Casing: <input checked="" type="checkbox"/> PVC Sched. 40 Flush Thread <input type="checkbox"/> Stainless Steel <input type="checkbox"/> Casing Diameter: <input type="checkbox"/> 2" <input checked="" type="checkbox"/> 4" <input type="checkbox"/> 6" Screen Slot: <input type="checkbox"/> 0.008 <input checked="" type="checkbox"/> 0.010 <input type="checkbox"/> Screen Style: <input checked="" type="checkbox"/> Machine Slot <input type="checkbox"/> Wire Wrap <input type="checkbox"/> Sand Pack: <u>CSSL 10/20 and 12/20</u> Bentonite Seal: <input type="checkbox"/> 1/4" Pellets <input checked="" type="checkbox"/> 1/2" Pellets <input type="checkbox"/> 1/2" Chips <input type="checkbox"/> Hole Plug <input type="checkbox"/> Grout Type: <u>Portland Cement</u> Weight: _____ Drill Rig: <input checked="" type="checkbox"/> Hollow Stem <input type="checkbox"/> Rotary <input type="checkbox"/> Drilled By: <u>Pool Environmental Drilling Lic. #: WD 1266</u> Logged By: <u>PWC</u> Completion Date: <u>12/15/92</u> Depth First Encountered Water: <u>4.0' BLS</u>					
<div style="display: flex;"> <div style="flex: 1;"> <p>0-4.0' SAND TO SILTY SAND, brown, slightly moist to saturated at 4.0', many fine roots. -thin bands of CLAYEY SAND (<4" thick) appear at 1.5', 2.5', and 3.5'. -slight hydrocarbon odor detected at 4.0'.</p> <p>4.0-6.0' SAND, brown, saturated, thin clay layers, hydrocarbon odor noted.</p> <p>6.0-9.0' CLAY, reddish/brown, saturated to moist, hydrocarbon odor noted.</p> <p>9.0-18.0' CLAY, alternating with SAND, brown, clay very moist, sand is saturated, sand is fine to medium grain, hydrocarbon odor and gray discoloration noted.</p> <p>18.0-20.0' SAND, gray, saturated, fine to medium grain, hydrocarbon odor and staining.</p> <p style="text-align: center;">TD = 20.0'</p> </div> <div style="flex: 1; text-align: center;"> </div> </div>											
Comments: <u>This well is a replacement for OCD-7.</u> <u>which was removed and grouted back to</u> <u>surface. Bentonite pellets were placed</u> <u>to within 1.0' of the surface.</u>				<div style="display: flex; justify-content: space-around;"> <div> Date 12/19/93 2/10/93 </div> <div> D-T-W 7.52 7.89 </div> <div> D-T-P </div> <div> Prod Thick </div> <div> Field pH 7.04 </div> <div> Field EC 9,700 </div> </div>							
Project: 622092005-110 (OCD-7R) Location: Artesia, New Mexico				<div style="display: flex; justify-content: space-around;"> <div> </div> <div> OCD-7AR </div> </div>							

[illegible]

Geologic Description		Monitoring Well		Design Specifications	
Depth (feet)	Log	Piezometer	Protective Casing		
1/18/95	Drilled, set and cemented surface casing at 51'.		YES		Elevations: 1 3307.31 2 3304.6 (feet MSL) 3 3306.92 4 3304.6 Coordinates: X 20831.82 Y 4856.18
62	No log kept--used adjacent OCD-7B.				Bore Hole Diameter: (Inner) 8 1/4" (Outer) 12"
1/20/95	2' recovery. Sand, fine-grained brown, some fine gravel 65.7-65.9', slight odor.				Type of Casing: (Inner) <input checked="" type="checkbox"/> PVC Sched. 40 Flush Thread <input type="checkbox"/> Stainless Steel <input type="checkbox"/> (Outer)
64					Casing Diam.: (Inner) <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> 10" (Outer) <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input checked="" type="checkbox"/> 10"
66	Gravelly sand, coarse, brown, gravel to 1.8", limestone origin.				Screen Slot: <input type="checkbox"/> 0.008 <input checked="" type="checkbox"/> 0.010 <input type="checkbox"/> Wire Wrap <input type="checkbox"/>
68	2' recovery Clay, dark gray, mottled colors, gray, greenish gray, brown.				Screen Style: <input checked="" type="checkbox"/> Machine Slot <input type="checkbox"/> Wire Wrap <input type="checkbox"/>
70					Sand Pack: CSSJ 16-40 silica sand
71.2-72	Clay, light gray to light brown, grading to clayey silt at bottom, septic odor.				Bentonite Seal: <input type="checkbox"/> 1/4" Pellets <input checked="" type="checkbox"/> 1/2" Pellets <input type="checkbox"/> 1/2" Chips <input type="checkbox"/> Hole Plug <input type="checkbox"/>
					Grout Type: 6% bentonite/Portland Drill Rig: <input checked="" type="checkbox"/> Hollow Stem <input type="checkbox"/> Rotary <input type="checkbox"/> Drilled by: Precision Engineering Lic.#: Logged by: DGB/BPS Completion Date: 1/20/95 Depth First Encountered Water: ---
					Comments: Purged approximately 200 gallons to clean and develop, sampled immediately after development. D-T-W from casing lip.
					RE/SPEC
					 OCD-7C
					Project: 318/3 Location: Artesia, New Mexico



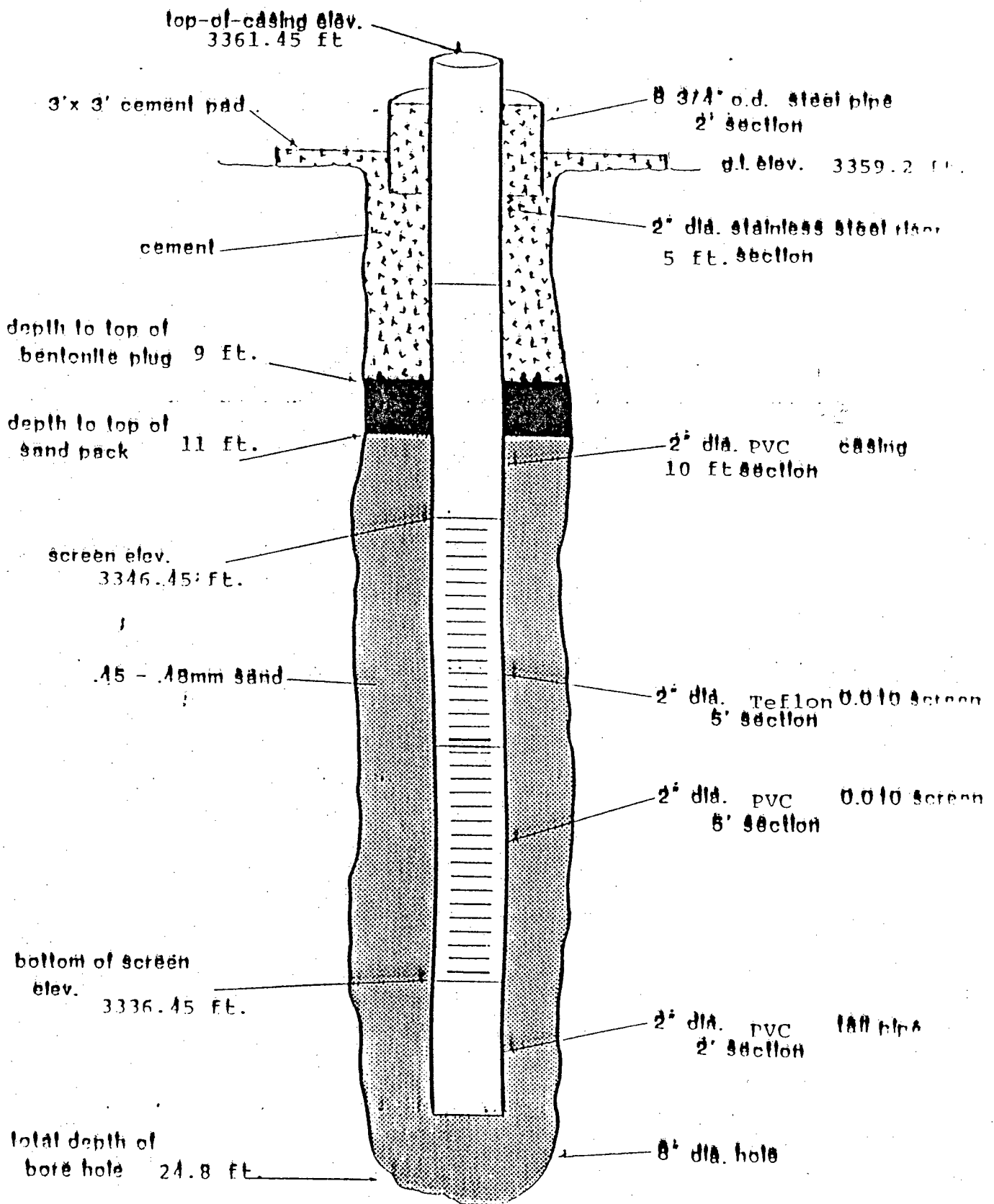
Depths in Feet
from Ground Surface
(Not to Scale)
LOG - 1



NO SCALE

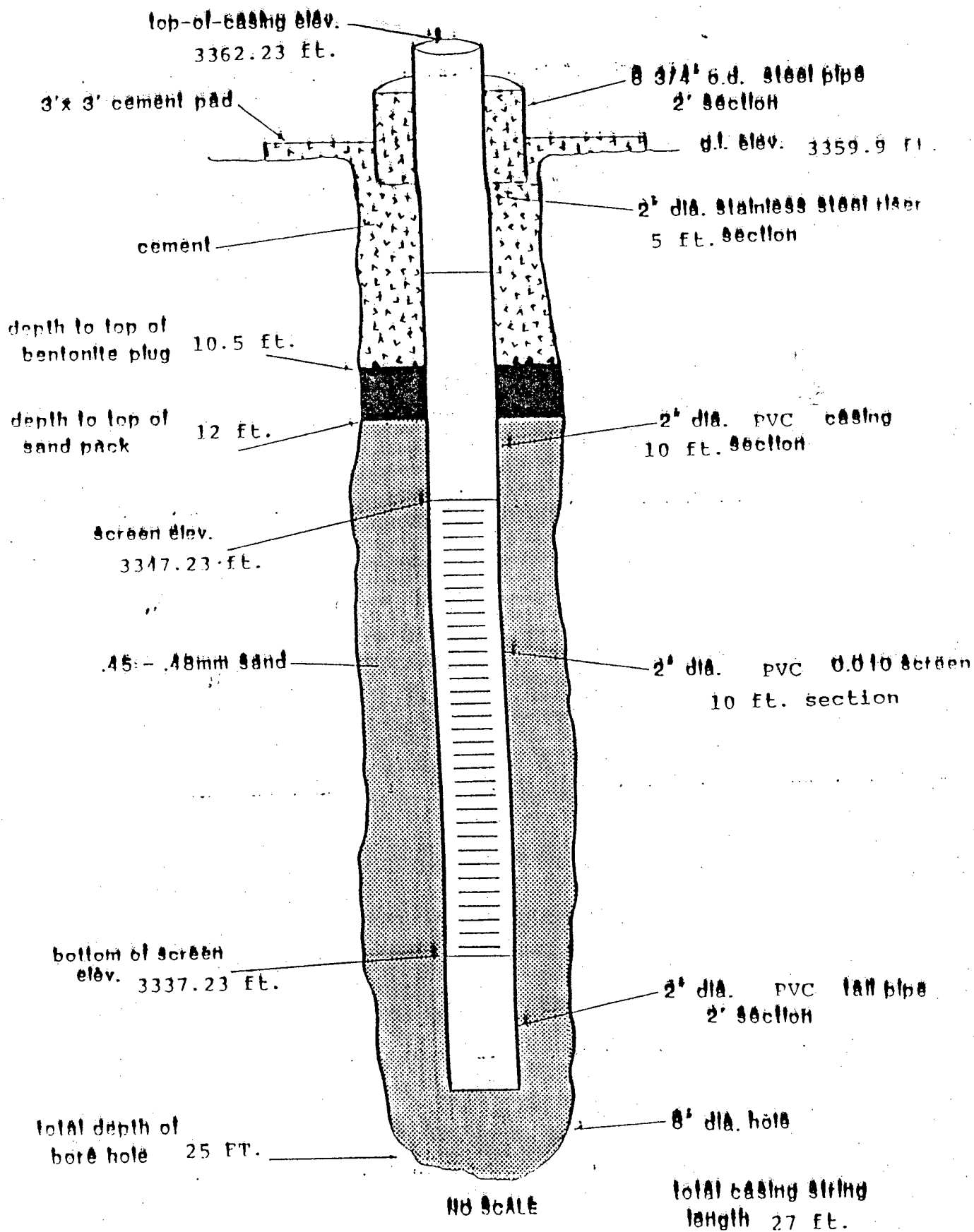
TEL-4

total casing string length 27 ft.

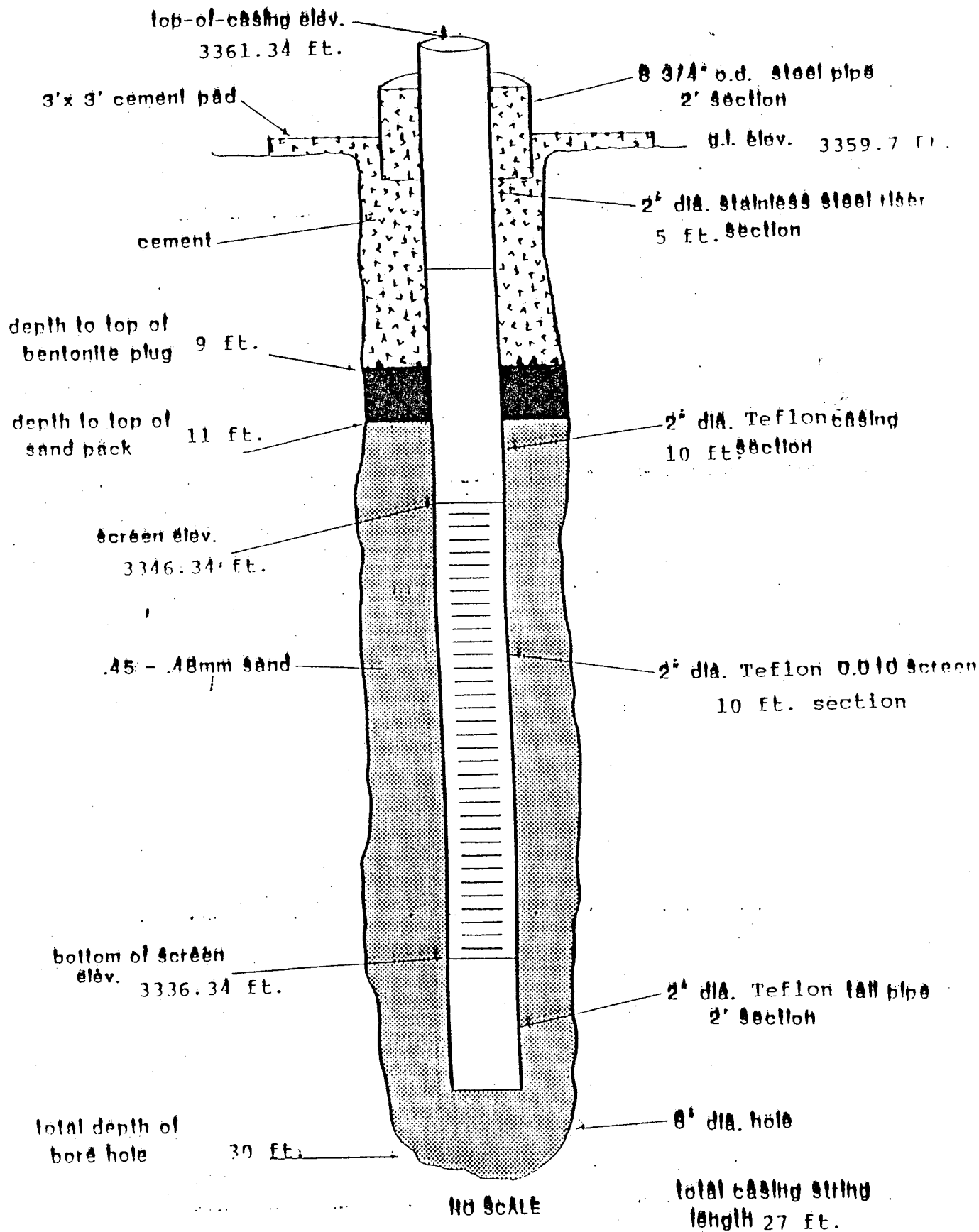


NO SCALE

TEL-3



TEL-2



NO SCALE

TEL-1



WELL LOG

WELL NO.

MW-72

Page 1 of 1

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/6/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,305.93'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,308.04'

FILE NAME: MVV-72.dat

UNIQUE NUMBER: 31-009-00289

STATIC WATER LEVEL: 5' BGS MEAS. PT.: Ground

DATE: 3/6/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -12.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTH IS

GROUT TYPE:

SEAL TYPE: Bentonite Chips

-1.0' to Surface

SCREEN PACK: 8/16 Brady Sand

-12.0' to -1.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.11'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

-12.0' to -2.0'

PLUG BACK: 100-2-1

[illegible]



WELL LOG

WELL NO.

MW-73

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/6/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,307.21

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,309.65

FILE NAME: MW-73.dat

UNIQUE NUMBER: 31-009-00290

STATIC WATER LEVEL: 7' BGS MEAS. PT.: Ground

DATE: 3/6/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -17.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: —

SEAL TYPE: Bentonite Chips

-1.0' to Surface

SCREEN PACK: 8/16 Brady Sand

-17.0' to -1.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.44'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

-17.0' to -2.0'

PLUG BACK: —

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon				0.1			SAND 10R 5/6 red, fine grained, 20% SILT, poorly sorted, dry.	
		Split Spoon				0.2			SAND 10R 6/6 light red, very fine grained, 20% SILT, loose.	
		Split Spoon				NA			SILT 10R 4/6 red, sticky, 10% SAND, very fine grained, moist.	
		Split Spoon			NR	0.3				
-5		Split Spoon			NR	0.5				
		Split Spoon			100%	0.7			SAND 10R 5/6 red, coarse to very fine grained, trace CLAY, poorly sorted. Wet at -7.0'.	
-10		Shovel			NR					
		Shovel								
-15		Shovel								
		Shovel								



ARCADIS

WELL LOG

WELL NO.

MW-74

1004 N. Big Spring St., Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER: MT000950.0001
 CLIENT NAME: Navajo Refining Company
 PROJECT NAME: Evaporation Pond Investigation
 SITE LOCATION: Navajo Refining Company Plant Area

Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/6/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,307.09'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,309.44'

FILE NAME: MW-74.dat

UNIQUE NUMBER: 31-009-00291

STATIC WATER LEVEL: 8' BGS MEAS. PT.: Ground

DATE: 3/6/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -17.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

TYPES

DEPTHS:

GROUT TYPE: —

SEAL TYPE: Bentonite Chips

-1.0' to Surface

SCREEN PACK: 8/16 Brady Sand

-17.0' to -1.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.35'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

-17.0' to -2.0'

PLUG BACK: —

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			NR	NA			SAND 10R 5/6 red, poorly sorted, dry.	
		Split Spoon			100%	0.7			SILT 10R 4/6 red, 30% SAND, very fine grained, plastic, moist, slight odor.	
		Split Spoon			50%	0.7				
-5		Split Spoon			50%	0.6				
		Split Spoon			50%	2.0				
		Split Spoon			50%	NA				
-10		Split Spoon			50%	3.1			SAND 10R 4/6 stained gray, trace GRAVEL, moist, heavy hydrocarbon odor, stained black at -8.0', wet.	
		Split Spoon			50%	NA				
		Split Spoon			50%	5.0				
		Split Spoon			100%	NA				
		Split Spoon			100%	3.5				
-15		Split Spoon							SAND 10R 5/6 red, coarse to very fine grained, trace CLAY, no staining at -16.0', SAND has liquified, now split spoon samples are from uphole.	



ARCADIS

WELL LOG

WELL NO.

MW-75

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.
DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/7/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,307.16'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,309.63'

FILE NAME: MW-75.dat

UNIQUE NUMBER: 31-009-00292

PLUG BACK: Bentonite Chips

STATIC WATER LEVEL: 10" BGS MEAS. PT.: Ground

DATE: 3/7/07

HOLE SIZE(S): 12"

TOTAL DEPTH: 25.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: —

SEAL TYPE: Bentonite Chips

SCREEN PACK: 8/16 Brady Sand

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-1.0' to Surface

-25.0' to -1.0'

-2.0' to +2.47'

-18.0' to -3.0'

-18.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			NR	NA			SAND red.	
		Split Spoon				507			CLAY stained black, sludge, strong hydrocarbon odor.	
		Split Spoon				820				
-5		Split Spoon				530			SAND stained gray, coarse to very fine grained, 20% SILT, loose.	
		Shovel				MAX				
		Split Spoon			NR	NA				
-10		Split Spoon				NA				
		Split Spoon				96.2			SAND stained black, 30% CLAY, trace GRAVEL, moist.	
		Shovel				52.6				
-15		Split Spoon			50%	18.5			SAND stained black, coarse to fine grained, loose, wet. SANDs are slumping, unsure if samples are insitu.	
		Shovel								
-20		Split Spoon			NR					
		Shovel								
-25		Split Spoon				NA				



ARCADIS

WELL LOG

WELL NO.

MW-76

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1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001

CLIENT NAME: Navajo Refining Company

PROJECT NAME: Evaporation Pond Investigation

SITE LOCATION: Navajo Refining Company Plant Area

Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/7/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.49'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,311.13'

FILE NAME: MW-76.dat

UNIQUE NUMBER: 31-009-00293

STATIC WATER LEVEL: 9.7 BGS MEAS. PT.: Ground

DATE: 3/7/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -20.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

TYPES

DEPTHS

GROUT TYPE: —

SEAL TYPE: Bentonite Chips

-2.0' to Surface

SCREEN PACK: 8/16 Brady Sand

-20.0' to -2.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-3.0' to +2.64'

—

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

-18.0' to -3.0'

PLUG BACK: Bentonite Chips

-18.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0						2.0			CLAY 20% SAND	
		Split Spoon				220			SLUDGE black paraffin	
					50%	NA				
		Split Spoon				558				
						1007				
-5		Split Spoon			100%	524			SAND stained gray, coarse to fine grained, strong odor	
						510.6			SLUDGE	
		Split Spoon				49.7			SAND stained gray, coarse to fine grained, strong odor	
						10.9			SAND stained gray, 20% CLAY, moist, sticky	
-10		Split Spoon			50%	NA			SLUDGE	
									CLAY gray and black stained, moist, strong odor	
		Shovel				8.6				
						8.2			SAND stained black, moist, coarse to fine grained, wet at -17.0', loose, trace GRAVEL	
-15		Split Spoon				11.5				
						7.1				
-20		Split Spoon								
		Shovel								



WELL LOG

WELL NO.

MW-77

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1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area

DRILLING CO: Eddy County, New Mexico
Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/8/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,307.00'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,309.36'

FILE NAME: MW-77.dat

UNIQUE NUMBER: 31-009-00294

STATIC WATER LEVEL: 7.8' BGS MEAS. PT.: Ground

DATE: 3/8/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -18.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: —

SEAL TYPE: —

SCREEN PACK: 8/16 Brady Sand

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

PLUG BACK: —

-1.0' to Surface

-18.0' to -1.0'

-3.0' to +2.36'

-18.0' to -3.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			100%	0.0			SAND, 15% CLAY, strong odor.	
		Split Spoon			100%	97			SLUDGE black, heavy.	
		Split Spoon			100%	179				
		Split Spoon			100%	653				
-5		Split Spoon			100%	1160			CLAY stained gray, 25% SAND, moist, strong odor, wet at -8.0', SAND stringers.	
		Split Spoon			100%	456				
		Split Spoon			100%	229				
		Split Spoon			100%	77				
-10		Split Spoon			100%	1110				
		Shovel				8.6				
-15		Split Spoon			50%	6.5			SAND stained black, coarse to very fine grained, loose, slumping.	
		Split Spoon			50%	5.0				



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WELL LOG

WELL NO.

MW-78

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950:0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/8/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,306.99'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,309.41'

FILE NAME: MW-78.dat

UNIQUE NUMBER: 31-009-00295

STATIC WATER LEVEL: MEAS. PT.: T.O.C.

HOLE SIZE(S): 12"

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

DATE:

TOTAL DEPTH: -22.0'

	TYPES	DEPTHS
GROUT TYPE:	—	—
SEAL TYPE:	Bentonite Chips	-1.0' to Surface
SCREEN PACK:	8/16" Brady Sand	-17.0' to -1.0'
CASING TYPE:	4" Diameter Sch. 40 PVC Blank	-2.0' to +2.42'
WELL SCREEN:	4" Diameter Sch. 40 PVC, 0.020" slots	-17.0' to -2.0'
PLUG BACK:	Bentonite Chips	-17.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			NR	NA			SILT 30% SAND, loose, powdery.	
		Split Spoon				NA				
		Split Spoon				447			SLUDGE black.	
		Split Spoon				741			SAND 30-40% CLAY, stained gray, strong odor, compacted.	
-5		Split Spoon				590				
		Split Spoon				680				
		Split Spoon			50%	NA				
		Split Spoon				205				
		Split Spoon			100%	12.0			CLAY stained gray, sand stringers, strong odor.	
-10		Split Spoon				15.5				
		Split Spoon			100%	13.9				
		Split Spoon				15.2				
		Split Spoon							SAND stained black, coarse to very fine grained, trace GRAVEL, strong odor, wet, slumping at -18.0' to -22.0'.	
-15		Split Spoon			50%	10.6				
		Split Spoon				8.8				
		Split Spoon			100%	12.4				
		Split Spoon				10.0				
-20		Split Spoon				9.6				



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WELL LOG

WELL NO.

MW-79

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950.0001
 CLIENT NAME: Navajo Refining Company
 PROJECT NAME: Evaporation Pond Investigation
 SITE LOCATION: Navajo Refining Company Plant Area
 Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/8/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.49'

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,310.99'

FILE NAME: MW-79.dat

UNIQUE NUMBER: 31-009-00296

STATIC WATER LEVEL: 8.1' BGS MEAS. PT.: Ground

DATE: 3/8/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -17.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: ---

SEAL TYPE: ---

Bentonite Chips

-1.0' to Surface

SCREEN PACK: ---

8/16 Brady Sand

-17.0' to -1.0'

CASING TYPE: ---

4" Diameter Sch. 40 PVC Blank

-2.0' to +2.50'

WELL SCREEN: ---

4" Diameter Sch. 40 PVC, 0.020" slots

-17.0' to -2.0'

PLUG BACK: ---

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0										
		Split Spoon				14.1			SAND 10R 4/6 red, 30% SILT, powdery.	
						10.3				
		Split Spoon				7.1			SAND 10R 5/6 red, 40% CLAY, moist.	
						8.4			CLAY 10R 3/6 dark red, trace SAND, moist, no odor.	
-5		Split Spoon				6.9				
						5.1				
		Split Spoon				3.5			SAND 10R 5/6 red, 20% CLAY, wet, trace odor, slight odor at -8.0'.	
						5.2				
-10		Split Spoon			50%	NA				
						3.0				
		Split Spoon			100%	2.0				
						3.8				
		Shovel							SAND 10R 5/6 light red, trace CLAY, trace GRAVEL, loose, slight hydrocarbon odor.	
-15		Split Spoon			100%	2.0				
						7.1				



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WELL LOG

WELL NO.

MW-80

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico
DRILLING CO: Atkins Engineering Co.
DRILLING METHOD: Hollow Stem Auger
SAMPLE METHOD: Split Spoon
DATE BEGUN: 3/8/07
DRILLER: M. Bates
LOGGER: B. Kolb
FILE NAME: MW-80.dat

STATIC WATER LEVEL: 8.3' BGS MEAS. PT.: Ground
HOLE SIZE(S): 12"
SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES
DEPTHS
GROUT TYPE: —
SEAL TYPE: Bentonite Chips
SCREEN PACK: 8/16 Brady Sand
CASING TYPE: 4" Diameter Sch. 40 PVC Blank
WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots
PLUG BACK: —

DATE COMPLETED: 3/29/07
ELEVATION (SURF.): 3,308.02'
ELEVATION (T.O.C.): 3,310.37'
UNIQUE NUMBER: 31-009-00297

DATE: 3/8/07
TOTAL DEPTH: -17.0'
-1.0' to Surface
-17.0' to -1.0'
-2.0' to +2.35'
-17.0' to -2.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			NR	NA			SILT powdery.	
		Split Spoon			100%	0.3			CLAY 10R 3/5 dark red, moist.	
-5		Split Spoon			100%	0.4				
		Split Spoon			100%	0.5				
		Split Spoon			100%	0.7				
		Split Spoon			50%	0.7				
-10		Split Spoon				3.1			SAND 10R 4/6 red, coarse to very fine grained, 20% CLAY, wet, slight odor, heaving SANDS at -16.0', less CLAY with depth.	
		Split Spoon				1.6				
		Split Spoon				1.4				
		Shovel				1.6				
-15		Split Spoon			50%	1.1				



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WELL LOG

WELL NO.

MW-81

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1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/9/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,309.42'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.020" slots

LOGGER: B. Kolb

ELEVATION (T.O.C.): 3,311.92'

FILE NAME: MW-81.dat

UNIQUE NUMBER: 31-009-00298

PLUG BACK: Bentonite Chips

STATIC WATER LEVEL: 9.5' BGS MEAS. PT.: Ground

DATE: 3/9/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -18.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: ---

SEAL TYPE: Bentonite Chips

-1.0' to Surface

SCREEN PACK: 8/16 Brady Sand

-17.0' to -1.0'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.50'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0									SLUDGE, heavily weathered, hard	
		Split Spoon			75%	0.0			SAND 10R 4/6 red, loose, slight odor.	
						0.0			SAND	
		Split Spoon				0.0			CLAY 10R 3/6 dark red, sticky, slight odor.	
-5		Split Spoon				0.0				
		Split Spoon			75%	0.7			SAND 10R 4/6 red, coarse to very fine grained, 20% SILT, wet, no odor.	
		Split Spoon				1.1				
-10		Split Spoon				1.0				
		Split Spoon				1.3				
		Split Spoon				0.7				
		Split Spoon				2.0				
		Shovel			50%				SAND 10R 4/6 red, coarse to very fine grained, trace GRAVEL, loose, wet, strong odor.	
-15		Split Spoon				NA				
		Split Spoon				0.4				
		Split Spoon				0.5				
		Split Spoon				0.7				



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WELL LOG

WELL NO.

MW-82

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950.0001
 CLIENT NAME: Navajo Refining Company
 PROJECT NAME: Evaporation Pond Investigation
 SITE LOCATION: Navajo Refining Company Plant Area
 Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/14/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.07'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,310.30'

FILE NAME: MW-82.dat

UNIQUE NUMBER: 31-009-00299

STATIC WATER LEVEL: 6.83' BGS MEAS. PT.: Ground

DATE: 3/14/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -18.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: ---

SEAL TYPE: Bentonite Chips

-0.5' to Surface

SCREEN PACK: 8/16 Brady Sand

-17.0' to -0.5'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.23'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots

-17.0' to -2.0'

PLUG BACK: Bentonite Chips

-17.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			2'	25.8			SAND 2.5YR 5/6 red, fine grained, subangular, moist, heavily impacted.	
		Split Spoon			1.5'	50.3				
-5		Split Spoon			1.8'	23.4			SLUDGE GLEY 2.5/1 5PB bluish black, strong odor, sandy, fine grained, subangular.	
		Split Spoon			2.0'	7.4				
		Split Spoon			1.8'	4.3			CLAY 2.5YR 6/1 reddish gray, firm, arenaceous, gray streaks.	
-10		Split Spoon			1.7'	2.4			SAND 2.5YR 7/1 light reddish gray to clear, medium grained, well rounded, well sorted, loose, spherical, wet.	
		Split Spoon			0.5'	11.8			Note: Water level -6.83'. Encountered flowing SAND from -14.0' to -16.0'. Unable to core below SAND. Gray in last split spoon. Interval sampled was -11.0' to -14.0' due to poor recovery.	
-15		Not Sampled								



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WELL LOG

WELL NO.

MW-83

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

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PROJECT NUMBER: MT000950.0001
 CLIENT NAME: Navajo Refining Company
 PROJECT NAME: Evaporation Pond Investigation
 SITE LOCATION: Navajo Refining Company Plant Area
 Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/15/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,307.01'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,309.50'

FILE NAME: MW-83.dat

UNIQUE NUMBER: 31-009-00300

STATIC WATER LEVEL: 7.0' BGS MEAS. PT.: Ground

DATE: 3/15/07

HOLE SIZE(S): 12"

TOTAL DEPTH: 18.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

TYPES:

DEPTHS:

GROUT TYPE: —

SEAL TYPE: Bentonite Ch.

-0.5' to Surface

SCREEN PACK: 8/16 Brady Sak

-17.0' to -0.5'

CASING TYPE: 4" Diameter St 10 PVC Blank

-2.0' to +2.49'

WELL SCREEN: 4" Diameter Sch. 10 PVC, 0.010" slots

-17.0' to -2.0'

PLUG BACK: Bentonite Chips

-17.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U.S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			0.1'	0.0			SAND 7.5YR 5/4 brown, fine grained, CLAY rich, impacted, moist.	
		Split Spoon			1.0'	22.0			CLAY 5YR 4/4 reddish brown, arenaceous, impacted, moist.	
		Split Spoon			0.8'	41.7			SLUDGE GLEY 2.2.5/1 5PB bluish black, arenaceous, argillaceous.	
		Split Spoon			1.0'	50.2				
-5		Split Spoon			1.0'	2.2			CLAY GLEY 2.6/1 5PB bluish gray, soft, moist.	
		Split Spoon			1.0'	6.2				
		Split Spoon			1.0'	1.1				
		Split Spoon			1.0'	1.1				
		Split Spoon			1.0'	1.7			CLAY GLEY 2.2.5/1 5PB bluish black, arenaceous, soft, moist, CLAY 2.5YR 8/4 pink, soft, interbedded.	
-10		Split Spoon			1.0'	6.3			CLAY GLEY 2.2.5/1 5PB bluish black, slightly arenaceous, wet soft.	
		Split Spoon			1.0'	1.7			Note: Water level is -7.0'.	
		Split Spoon			1.0'	5.8				
		Split Spoon			0.3'	2.7			SAND 7.5YR 4/1 dark gray, medium to fine grained, well rounded, spherical, well sorted, loose, wet. Sand was flowing. Could not sample below -14.0'.	
		Split Spoon			0.6'	9.9				
-15		Split Spoon								
		Split Spoon								
		Split Spoon								
		Split Spoon								
		Split Spoon								



WELL LOG

WELL NO.

MW-84

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1004 N. Big Spring St., Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area

DRILLING CO. Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/15/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.97'

LOGGER: R. Lang

ELEVATION (T.O.C.) 3,311.17'

FILE NAME: MW-84.dai

UNIQUE NUMBER: 31-009-00301

STATIC WATER LEVEL: — MEAS. PT.: —
HOLE SIZE(S): 12"
SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

GROUT TYPE:

SEAL TYPE: Bentonite Chips

SCREEN PACK: 8/16 Brady Sand

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots

PLUG BACK: Bentonite Chips

DATE: —
DEPTH: -18.0'

DEPTHS

-1.5' to Surface

-17.0' to -1.5'

-2.0' to +2.20'

-17.0' to -2.0'

-17.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			1.0'	3.0			SAND 7.5YR 5/4 brown, fine grained, angular, argillaceous.	
		Split Spoon			0.8'	106.8			SLUDGE GLEY 2.2.5/1 5PB bluish black, soft to firm.	
		Split Spoon			1.0'	414.5				
		Split Spoon			1.0'	556.2				
-5		Split Spoon			1.0'	425.6				
		Split Spoon			1.0'	123.6			CLAY GLEY 2.2.5/1 5PB bluish black, soft to firm; CLAY GLEY 2.6/1 5PB bluish gray, interbedded, soft.	
		Split Spoon			1.0'	304.8				
		Split Spoon			1.0'	486.6				
		Split Spoon			1.0'	219			CLAY 2.5YR 8/4 pink, firm, moist, rare, thin interbeds of black contaminated CLAY.	
-10		Split Spoon			1.0'	210				
		Split Spoon			1.0'	211				
		Split Spoon			1.0'	119				
		Split Spoon			1.0'	211				
		Split Spoon			1.0'	211				
-15		Split Spoon			1.0'	414				
		Split Spoon			1.0'	214				
		Split Spoon			1.0'	116				
		Split Spoon			1.0'	216				
		Split Spoon			0.5'	211			SAND 2.5YR 8/3 pink, medium to fine grained; subrounded to subangular; subprismatic, well sorted; loose.	
-20		Split Spoon			0.8'	213			CLAY 2.5YR 8/3 pink, soft to firm, fat CLAY.	
									Note: Water level at -10.3'. Not static. Well recovers very slowly.	



WELL LOG

WELL NO.

MW-85

Page 1 of 1

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area

DRILLING CO: Eddy County, New Mexico
Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/15/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.30'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,310.66'

FILE NAME: MW-85.dat

UNIQUE NUMBER: 31-009-00302

STATIC WATER LEVEL: — MEAS. PT.: —
HOLE SIZE(S): 12"
SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

DATE: —
TOTAL DEPTH: -18.0'

TYPES	DEPTHS
GROUT TYPE: Portland Cement	-1.0' to Surface
SEAL TYPE: Bentonite Chips	-2.0' to -1.0'
SCREEN PACK: 8/16 Brady Sand	-17.0' to -2.0'
CASING TYPE: 4" Diameter Sch. 40 PVC Blank	-3.0' to +2.36'
WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots	-18.0' to -3.0'
PLUG BACK: —	—

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			1.0'	106.5			SLUDGE GLEY 2.2.5/1 5PB bluish black, arenaceous.	
		Split Spoon			1.0'	26.0			SAND 7.5YR 5/3 brown, fine grained; subangular, well sorted.	
		Split Spoon			1.0'	120.1			SLUDGE GLEY 2.2.5/1 5PB bluish black, arenaceous.	
		Split Spoon			1.0'	130.1			CLAY 7.5YR 6/1 gray, firm, some oil staining.	
-5		Split Spoon			1.0'	348.2				
		Split Spoon			1.0'	327.0				
		Split Spoon			1.0'	303.0				
		Split Spoon			1.0'	320.6				
		Split Spoon			1.0'	176.3				
-10		Split Spoon			1.0'	13.9			CLAY 5YR 6/1 light reddish brown, moist.	
		Split Spoon			1.0'	165.2			CLAY 5YR 6/1 light reddish brown, arenaceous, layers bleeding oil.	
		Split Spoon			1.0'	209.2				
		Split Spoon			0.5'	1.9				
		Split Spoon			0.5'	1.2			SAND 7.5YR 6/1 gray, medium grained; well rounded, spherical, well sorted, loose, wet.	
-15		Split Spoon			1.0'	1.9			Note: Sands flowing at -16.0'. Could not sample.	
		Split Spoon			1.0'	2.0				
		Split Spoon			NR					
		Split Spoon								



ARCADIS

WELL LOG

WELL NO.

MW-86

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER: MT000950.0001

CLIENT NAME: Navajo Refining Company

PROJECT NAME: Evaporation Pond Investigation

SITE LOCATION: Navajo Refining Company Plant Area

Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/15/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,308.35'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,310.65'

FILE NAME: MW-86.dat

UNIQUE NUMBER: 31-009-00303

STATIC WATER LEVEL: 6.05' BGS MEAS. PT.: Ground

DATE: 3/15/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -18.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

DEPTHS

GROUT TYPE: —

SEAL TYPE: Bentonite Chips

-0.5' to Surface

SCREEN PACK: 8/16 Brady Sand

-17.0' to -0.5'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank

-2.0' to +2.30'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots

-17.0' to -2.0'

PLUG BACK: Bentonite Chips

-17.0'

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVN READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon				3.8			SAND 7.5YR 5/3 brown, fine grained, subangular, argillaceous, odor.	
		Split Spoon				78.0			SLUDGE GLEY 2 2.5/1 5PB bluish black.	
		Split Spoon				158.0				
		Split Spoon				785.1				
		Split Spoon				1058				
-5		Split Spoon				758.0				
		Split Spoon				1653			CLAY GLEY 1 5/2 5G grayish green, firm, arenaceous, gypsum crystals, iron stains.	
		Split Spoon				1241				
		Split Spoon				2231				
		Split Spoon				25.7			CLAY 2.5YR 8/4 pink, soft, free petroleum.	
-10		Split Spoon				26.3				
		Split Spoon			0.5'	3.3				
		Split Spoon			0.5'	2.5			SAND 7.5YR 6/1 gray, medium to fine grained, subrounded, spherical, well sorted, loose.	
		Split Spoon				2.0			Note: Encountered flowing sand at -16.0'. Water level at -6.05'.	
-15		Split Spoon				2.0				
		Split Spoon				2.0				



ARCADIS

WELL LOG

WELL NO.

MW-87

Page 1 of 1

PROJECT NUMBER: MT000950 0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area
Eddy County, New Mexico
DRILLING CO.: Atkins Engineering Co.
DRILLING METHOD: Hollow Stem Auger
SAMPLE METHOD: Split Spoon
DATE BEGUN: 3/19/07
DRILLER: M. Bates
LOGGER: R. Lang
FILE NAME: MW-87.dat

STATIC WATER LEVEL: — MEAS. PT.: — DATE: —
HOLE SIZE(S): 12" TOTAL DEPTH: -18.0'
SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES DEPTHS
GROUT TYPE: —
SEAL TYPE: Bentonite Chips -1.5' to Surface
SCREEN PACK: 8/16 Brady Sand -17.0' to -1.5'
CASING TYPE: 4" Diameter Sch. 40 PVC Blank -2.0' to +2.30'
WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots -17.0' to -2.0'
PLUG BACK: Bentonite Chips -17.0'

DATE COMPLETED: 3/29/07
ELEVATION (SURF.): 3,304.80'
ELEVATION (T.O.C.): 3,307.10'
UNIQUE NUMBER: 31-009-00304

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			NR				SILTY TOP SOIL 2.5YR 6/4 light reddish brown.	
		Split Spoon			0.2	0.3			SAND 2.5YR 6/3 light reddish brown, fine grained SAND to SILT, subangular, poorly sorted, argillaceous, moist.	
		Split Spoon			1.0	0.2				
		Split Spoon			1.0	0.3			CLAY 2.5YR 6/4 light reddish brown, soft, arenaceous, moist.	
-5		Split Spoon			1.0	0.5				
		Split Spoon			1.0	0.5				
		Split Spoon			1.0	0.4				
		Split Spoon			1.0	0.5			CLAY 2.5YR 6/4 light reddish brown, soft, arenaceous, moist, becoming firm.	
		Split Spoon			1.0	0.5				
-10		Split Spoon			1.0	0.4				
		Split Spoon			1.0	0.3				
		Split Spoon			1.0	0.3				
		Split Spoon			1.0	0.6			SANDSTONE 10R 5/6 red, medium grained SAND to SILT, well rounded, poorly sorted, soft, argillaceous, gypsum crystals.	
		Split Spoon			1.0	0.6				
-15		Split Spoon			0.5	0.4				
		Split Spoon			1.0	0.4				
		Split Spoon			1.0	0.2				
		Split Spoon			1.0	0.3				
		Split Spoon			1.0					



WELL LOG

WELL NO.

MW-88

Page 1 of 1

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000950.0001
CLIENT NAME: Navajo Refining Company
PROJECT NAME: Evaporation Pond Investigation
SITE LOCATION: Navajo Refining Company Plant Area

DRILLING CO. Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/20/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,305.51'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,308.02'

FILE NAME: MW-88.dat

UNIQUE NUMBER: 31-009-00305

STATIC WATER LEVEL: --- MEAS. PT.: ---
HOLE SIZE(S): 12"
SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad
TYPES

GROUT TYPE:		
SEAL TYPE:	Bentonite Chips	-2.5' to Surface
SCREEN PACK:	8/16 Brady Sand	-18.0' to -2.5'
CASING TYPE:	4" Diameter Sch. 40 PVC Blank	-3.0' to +2.51'
WELL SCREEN:	4" Diameter Sch. 40 PVC, 0.010" slots	-18.0' to -3.0'
PLUG BACK:		

[illegible]



ARCADIS

WELL LOG

WELL NO.

MW-89

1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383

Tel: 432/687-5400 Fax: 432/687-5401

Page 1 of 1

PROJECT NUMBER: MT000955.0001
 CLIENT NAME: Navajo Refining Company
 PROJECT NAME: Three-Mile Ditch Investigation
 SITE LOCATION: Navajo Refining Company Plant Area
 Eddy County, New Mexico

DRILLING CO: Atkins Engineering Co.

DRILLING METHOD: Hollow Stem Auger

SAMPLE METHOD: Split Spoon

DATE BEGUN: 3/20/07

DATE COMPLETED: 3/29/07

DRILLER: M. Bates

ELEVATION (SURF.): 3,315.52'

LOGGER: R. Lang

ELEVATION (T.O.C.): 3,317.87'

FILE NAME: MW-89.dat

UNIQUE NUMBER: 31-009-00306

STATIC WATER LEVEL: 7.15' BGS MEAS. PT.: Ground

DATE: 3/20/07

HOLE SIZE(S): 12"

TOTAL DEPTH: -17.0'

SURFACE COMPLETION: Stick-Up w/4"x4"x6" Pad

TYPES

DEPTHS:

GROUT TYPE: Portland Cement -0.5' to Surface

SEAL TYPE: Bentonite Chips -1.5' to -0.5'

SCREEN PACK: 8/16 Brady Sand -17.0' to -1.5'

CASING TYPE: 4" Diameter Sch. 40 PVC Blank -2.0' to +2.35'

WELL SCREEN: 4" Diameter Sch. 40 PVC, 0.010" slots -17.0' to -2.0'

PLUG BACK: —

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	QVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0		Split Spoon			1.0'	0.0			CLAY 7.5YR 6/4 light brown, CLAY TOP SOIL, arenaceous, dry.	
		Split Spoon			0.4'	0.3				
		Split Spoon			0.3'	0.0				
		Split Spoon			1.0'	0.0			CLAY 7.5YR 6/4 light brown, firm, moist.	
-5		Split Spoon			NR	NR			SAND 7.5YR 7/8 reddish yellow, fine to medium grained, subrounded, spherical, argillaceous, soft moist.	
		Split Spoon			1.0'	0.1				
		Split Spoon			1.0'	0.3			CLAY 7.5YR 6/4 light brown, firm, gypsum crystals abundant.	
		Split Spoon			1.0'	0.1				
		Split Spoon			1.0'	0.4				
-10		Split Spoon			1.0'	0.3				
		Split Spoon			1.0'	0.7				
		Split Spoon			1.0'	0.2			CLAY GLEY 2.4/1 5B dark bluish gray, soft.	
		Split Spoon			1.0'	0.4			CLAY 5YR 8/3 pink, firm, arenaceous.	
		Split Spoon			1.0'	0.2			SAND 5YR 6/2 pinkish gray, fine grained, well rounded, spherical, loose, well sorted, wet.	
-15		Split Spoon			1.0'	0.3				
		Split Spoon			1.0'	0.4			CLAY 5YR 8/3 pink, soft to firm.	
									Note: Water at -7.15'.	

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, May 18, 2007 8:43 AM
To: Ken Davis
Cc: DARRELL MOORE; Nancy Niemann; Shannon Beeler; Jones, William V., EMNRD; Price, Wayne, EMNRD
Subject: RE: 70F5826 - Navajo Refining WDW-3. Notice of Publication - Draft Document. (API# 30-015-26575)

Ken:

The OCD files are currently being scanned down in Albuquerque; consequently, I will not have access to OCD records until about July 2007. Consequently, the OCD is requesting your assistance with the following questions based on your review of the OCD's draft public notice:

- 4) The OCD must know the formation(s) and injection interval(s) for this well. The injection interval appears to have increased in length based on Subsurface's December 2006 correspondence, which specified an injection interval from 7650 to 8620. Your recent revision to the OCD public notice specifies an injection interval from 7650 to 8894 ft. Does the interval you specify conform to the original application? Did the AOR conducted by Subsurface evaluate the interval from 7650 to 8894 ft. and the associated formation(s) for cement?
- 5) Was public notice given to all well owners in the interval from 7650 to 8894 ft.?
- 6) Are there any more open injection interval(s) associated with the well that we are not aware of?

The OCD and Navajo Refining Company must know concise information in order to properly public notice the well and evaluate whether any corrective action(s) needs to be taken as part the application review and approval process. Thank you.

From: Ken Davis [mailto:kdavis@subsurfacegroup.com]
Sent: Monday, May 14, 2007 10:44 AM
To: Chavez, Carl J, EMNRD
Cc: DARRELL MOORE; Nancy Niemann; Shannon Beeler
Subject: 70F5826 - Navajo Refining WDW-3. Notice of Publication - Draft Document.

Carl:

As you suggested, I have corrected/changed the above Attachment you sent me. The corrections/changes were made so the Notice will coincide with the WDW-3 Permit Application. The changes are shown in Red. If approved, this is the document we will publish in the Artesia Daily Press. Additionally, we will attach this document to a Transmittal letter and send it to the Leasehold Operators within ½ Mile of Navajo's WDW-3.

Please let me know if this approach meets the requirements of 20 NMAC 6.2.3108. If so, I will put the program in motion within the next few days.

Thanks for your help.

Ken E. Davis
Principal Staff Consultant
Subsurface Technology Inc.
6925 Portwest Dr. Suite 110
Houston, Texas 77024
Office: (713) 880-4640
Fax: (713) 880-3248
Cell: (713) 201-3720
Email: kdavis@subsurfacegroup.com

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5/31/2007

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ARCADIS

Infrastructure, environment, facilities

ARCADIS U.S., Inc.
1004 North Big Spring Street
Suite 300
Midland
Texas 79701
Tel 432.687.5400
Fax 432.687.5401

Transmittal Letter

To:
Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural
Resources Department
Oil Conservation Division, Environmental
Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505
505.476.3491

Copies:
Hope Monzeglio - New Mexico
Environmental Dept
Darrell Moore - Navajo Refining
Co., L.P.

From:
Debrah Gann - ARCADIS

Date:
April 28, 2007

Subject:
2006 Annual Groundwater Report - Navajo
Refining Company, L.P.

ARCADIS Project No.:
MT000967.0001

We are sending you:

☒ Attached

☐ Under Separate Cover Via _____ the Following Items:

☐ Shop Drawings

☐ Plans

☐ Specifications

☐ Change Order

☐ Prints

☐ Samples

☐ Copy of Letter

☐ Reports

☒ Other: **REPORT**

Copies	Date	Drawing No.	Rev.	Description	Action*
2	4/27/2007			2006 ANNUAL GROUNDWATER REPORT - Navajo Refining Company, L.P.; RCRA #NMD048918817; HWB-NRC006-001	AS

Action*

☐ A Approved

☐ CR Correct and Resubmit

☐ Resubmit _____ Copies

☐ AN Approved As Noted

☐ F File

☐ Return _____ Copies

☒ AS As Requested

☐ FA For Approval

☐ Review and Comment

☐ Other: _____

Mailing Method

☐ U.S. Postal Service 1st Class

☐ Courier/Hand Delivery

☒ FedEx Priority Overnight

☐ FedEx 2-Day Delivery

☐ Certified/Registered Mail

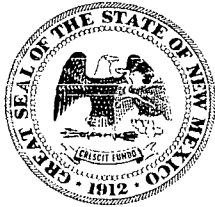
☐ United Parcel Service (UPS)

☐ FedEx Standard Overnight

☐ FedEx Economy

☐ Other: _____

Comments: _____



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 476-6000
Fax (505) 476-6030
www.nmenv.state.nm.us



RON CURRY
SECRETARY

CINDY PADILLA
DEPUTY SECRETARY

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

March 9, 2007

Darrell Moore
Navajo Refining Company
501 East Main Street, P.O. Drawer 159
Artesia, New Mexico 88210

**RE: WELL LOG INFORMATION
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID # NMD048918817
HWB-NRC-MISC**

Dear Mr. Moore

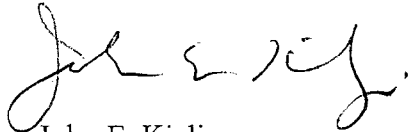
The New Mexico Environment Department (NMED) has reviewed Navajo Refining Company's Artesia Refinery (Permittee) December 1, 2006 letter titled "Navajo Refining Company's Boring and Drilling Logs." Other documents included during this review are "Borehole Lithologic Data Subsurface Hydrocarbon Investigation Navajo Refinery, Artesia, New Mexico 1991-1997" and the January 31, 2007 letter titled "Follow-up letter dated December 1, 2006 Well abandonment and installation annual update."

NMED has created Table 1 that identifies the various wells located at the refinery and all well log and well abandonment information found in NMED's administrative record. The Permittee must provide any well information (e.g., well logs, well construction diagrams, well abandoned, damaged) for the wells that are missing information in the attached Table 1. If the Permittee does not have any specific information in their records, this must be indicated in the response to this letter.

Darrell Moore
Navajo Refining Company
March 9, 2007
Page 2 of 2

All available well information must be submitted to NMED and OCD no later than June 11, 2007. If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,



John E. Kielling
Program Manager
Permits Management Program
Hazardous Waste Bureau

JEK:hcm

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
D. Whaley, NRC
J. Byrd, NRC
W. Price, NMOCD
Reading File and NRC 2007 File
NRC-HWB-MISC

Table 1
Navajo Refinery Company
Well list, abandonment and well log information

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
MW-1R	Well log		W. of the EPs
MW-2A			NW. of the EPs
MW-2B			NW. of the EPs
MW-3			S. of EP 1 & 2
MW-4A			S. of EP 1 & 2
MW-4B			S. of EP 1 & 2
MW-5A			S. of EP 2
MW-5B			S. of EP 2
MW-5C			S. of EP 2
MW-6A	Test Well		SW. of EP 1
MW-6B	Test Well		SW. of EP 1
MW-7A			S. of EP 3 Replacement of MW-7
MW-7B			S. of EP 3
MW-8	Well logging form		TMD, S. of E. draw btw B and H Rd
MW-9	Well logging form		TMD, S. of E. draw btw B and H Rd
MW-10			S. of EPs

Navajo Refining Company

March 9, 2007

Page 2 of 12

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
MW-11A			N. of U.S. Hwy 82 btw B & H Rd
MW-11B			~ 5 ft N. of KWB- 11A on M. Chase
MW-12			NW of EP 6
MW-13			NW of EP 1
MW-14			E. of EP 3 & 6
MW-15			W. of EP 1
MW-16			E. of H Rd and S. of E draw
MW-17			N. of E Draw, E. H Rd and W. of Pecos River
MW-18	Well Record		N. Part of Refinery E. of the NCL
MW-18A			S. of EPs
MW-19			South of NCL 31 in NW part of Refinery
MW-20	Geologic description and design specification information		E. of B. Rd, S. of E. draw
MW-21	Geologic description and design specification information		S. of E. draw, btw B & H Rd.
MW-22A			S. of EPs
MW-22B			S. of EPs
MW-23	Well Record		W. of TEL

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
MW-24	Well Record		East of Evaporation Pond 3 and 6
MW-25			S. of EP, W. of Pecos River, E. of H Rd.
MW-26			S. of EP, W. of Pecos River, E. of H Rd.
MW-27			E. of H Rd and S. of E. draw
MW-28	Well Record		E. of the SE. Tank Farm Area
MW-29	Geologic description and design specification information, Well Record		In refinery N. of TEL
MW-30			NE of TEL
MW-39	Well construction details sheet		N. of the TEL
MW-40			N. of the TEL
MW-41	Well construction details sheet		N. of the TEL
MW-42			N. of the TEL
MW-43	Well construction details sheet		NW. of the TEL
MW-45	Well is damaged. Well construction details sheet	Damaged	E. of Refinery, S. of E draw
MW-46	Well construction details sheet		E. of Refinery, S. of E draw
MW-47	Well construction details sheet		
MW-48			S. of SE Tank farm Area

Navajo Refining Company

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Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
MW-49			E. of Refinery, midpoint btw E. draw and U.S. Hwy 82
MW-50			W. of Refinery, E. of U.S. Hwy 285 and N. of U.S. Hwy 82
MW-51	Well no longer exists.		
MW-52			S. of the Refinery, S. of U.S Hwy 82
MW-53	Boring/Well Log		W. of Refinery btw U.S. Hwy 285 and RR tracks
MW-54A	Boring/Well Log		NW. of NCL
MW-54B	Boring/Well Log		NW of NCL
MW-55	Boring/Well Log		E. of NCL
MW-56	Boring/Well Log		NE of the Refinery
MW-57	Well log		S. of US Hwy 82 and E of Bolton Rd
MW-58	Well log		S. of U.S. Hwy 82 and W. of B Rd
MW-59	Well log		E. of the TEL
MW-60	Well log		E. of the TEL
MW-61	Boring Log		SW of TEL
MW-62	Boring Log		SW of TEL

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
MW-63	Boring Log		SW of TEL
MW-64	Boring Log		In Refinery area, N. of U.S. HWY 82
MW-65	Boring Log		S. of the SE Tank Farm Area
MW-66	Boring Log		E. of the SE Tank Farm Area
MW-67	Boring Log		E. of the Diesel Tank Farm Area
MW-68 (MW-28)			S. of E draw, btw D and H Rd.
MW-69 (MW-23)			NW of EP 1 and 2
MW-70 (MW-19)			S. of Eps;
MW-71 (MW-29)			Between Bolton and Dirt Rd.
KWB-1A	Geologic description and design specification information		S. of E draw, W. of B Rd.
KWB-1B	Geologic description and design specification information		S. of E draw, W. of B Rd.
KWB-1C	Geologic description and design specification information		S. of E draw, W. of B Rd.
KWB-1P	Geologic description and design specification information		

Navajo Refining Company

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Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
KWB-2A	KWB-2R replaced this well. Geologic description and design specification information	Well no longer used	
KWB-2B	Geologic description and design specification information		
KWB-P2	Geologic description and design specification information		E. of D Rd, N. of U.E. Hwy 82
KWB-2R	Replaced KWB-2A		S. of U.S. Hwy 82 on G.G. Armstrong & Son
KWB-3A	Geologic description and design specification information. Well replaced by KWB-3R	Well no longer used	
KWB-3B	Geologic description and design specification information		
KWB-3R	Well log. Replacement well for KWB-3A.		S. of U.S. Hwy 82 btw B & D Rd.
KWB-3P	Geologic description and design specification information		S. of US Hwy 82 & E of H
KWB-4	Geologic description and design specification information		N. of U.S. Hwy 82, W. of B Rd.
KWB-4P	Geologic description and design specification information		N. of US Hwy 82 & E of H Rd.
KWB-5	Geologic description and design specification information		N. of U.S. Hwy 82, W. of B Rd.
KWB-P5			N. of US Hwy 82 on H Rd.
KWB-6	Geologic description and design specification information		N. of U.S. Hwy 82, W. of B Rd.

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
KWB-7	Geologic description and design specification information		N. of U.S. Hwy 82 btw B & D Rd
KWB-8	Geologic description and design specification information		N. of U.S. Hwy 82 btw B & D Rd.
KWB-9	Geologic description and design specification information		S. of U.S. Hwy 82, E. of B Rd.
KWB-10	Geologic description and design specification information		E. of Refinery, S. of E. draw, N. of U.S. Hwy 82
KWB-11A	Geologic description and design specification information		N. of U.S. Hwy 82 btw B & D Rd
KWB-11B	Geologic description and design specification information		N. of U.S. Hwy 82 btw B & D Rd
KWB-12A	Geologic description and design specification information		S. of U.S. Hwy 82, E. of B Rd.
KWB-12B	Geologic description and design specification information		S. of U.S. Hwy 82, E. of B Rd.
KWB-13			S. of U.S. Hwy 82, W. of B Rd
NP-1	Geologic description and design specification information		S. of E. draw, W. of B Rd.
NP-2	Geologic description and design specification information		Directly E. of B Rd., S. of E draw
NP-3	Geologic description and design specification information		Directly N. of E. draw, NE. of B Rd.
NP-4	Geologic description and design specification information		N. of Eagle Draw, E. of B Rd.

Navajo Refining Company

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Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
NP-5	Geologic description and design specification information		S. of Richey Rd, N. of E. Draw, W. of B Rd.
NP-6	Geologic description and design specification information		S. of E. draw, W. of B Rd.
NP-7	Geologic description and design specification information	Destroyed	S. of E draw, btw D & H Rd.
NP-8			NW of EP 1
NP-9			S. of Richey Rd, N. of E. Draw, W. of B Rd.
OCD-1			NW. of EP 6
OCD-2A			N. of EP 6
OCD-2B			N. of EP 6
OCD-3			NE. of EP 6
OCD-4			NE. of EP 6
OCD-5			NE of EP-6
OCD-6			E. of EP-6
OCD-7A			SE. of EP-6 Replacement well for OCD-7AR
OCD-7B			E. of EP 3
OCD-7C			E. of EP 3
OCD-8A			SE. of EP 3

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
OCD-8B			SE. of EP 3
NCL-31	Well log and well construction sheet		NW. Portion of the Refinery
NCL-32	Well log and well construction sheet		NW. Portion of the Refinery
NCL-33	Well log and well construction sheet		NW. Portion of the Refinery
NCL-34	Well log and well construction sheet		NW. Portion of the Refinery
NCL-44			NW. Portion of the Refinery
NCL-49			NW. Portion of the Refinery
TEL-1			NE. Portion of the Refinery
TEL-2			NE. Portion of the Refinery
TEL-3			NE. Portion of the Refinery
TEL-4			NE. Portion of the Refinery
RW-1			North Portion of the Refinery
RW-2			N. Portion of the Refinery
RW-3			NW of the TEL

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
RW-4			S. Portion of the Refinery
RW-5			S. Portion of the Refinery
RW-6			S. Portion of the Refinery
RW-7			S. of the NCL
RW-8			N. Portion of the Refinery
RW-9			N. Portion of the Refinery
RW-10			N. Portion of the Refinery
RW-11			E. of Bolton Rd
RW-11-01	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-02	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-03	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-04	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-05	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-06	Well Log		Along Bolton Rd, S. of HWY 82

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
RW-11-07	Well Log		Along Bolton Rd, S. of HWY 82
RW-11-08	Well Log		Along Bolton Rd, S. of HWY 82
RW-12			E. of Bolton Rd
RW-13			E. of Bolton Rd
RW-14			E. of Bolton Rd
RW-15			S. Portion of the Refinery
RW-16			N. Portion of the Refinery
RW-17			N. Portion of the Refinery
RW-18			S. of E draw & W. of B Rd.
RA-307			Corner of Bolton Rd and US Hwy 82
RA 313			N. of U.S. Hwy 82, W. of B Rd.
RA 314			N. of U.S. Hwy 82, W. of B Rd.
RA 3723			N. of U.S. Hwy 82, W. of B Rd.
RA 3156			S. of U.S. Hwy 82 and E. of B Rd.

Monitoring Well ID	Well Information currently in NMED's Administrative Record	Well condition and abandonment info	Approximate Well location
RA 3353			S. of U.S. Hwy 82 and E. of B Rd
RA 4196			N. of U.S. Hwy 82 and E. of B Rd
RA 4798			E. of B Rd, N. of U. S. Hwy 82
RA 1331	Replacement well is small triangle east of the "Pemberton House, not named.	Abandoned	Btwn Bolton and Dirt Rd.
MMW-24 (Plant)	No longer exists, well was filled in.		
MMW-AE	No longer exists		
MMW-AH	No longer exists		

Table date: 3/07

Acronym List

N = North; S = South; E = East; W = West; NE = Northeast; NW = Northwest; SW = Southwest; SE = Southeast;
 Btw = between;

B Rd = Bolton Road; H Rd = Haldeman Road; D Rd = Dirt Road; Hwy = highway;

EP = Evaporation Ponds; TMD = Three Mile Ditch; E. draw = Eagle Draw;

NCL = North Colony Landfarm; TEL = Tetra Ethyl Lead Impoundment.

MMW-69 (MMW-23) – (Old Well Designation)

Hansen, Edward J., EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, February 15, 2007 1:10 PM
To: Monzeglio, Hope, NMENV
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Subject: RE: Navajo- Artesia

Hope:

FYI, I will be conducting an annual inspection of the Navajo- Artesia Refinery beginning this coming Monday. I will be verifying the location of the new RWs E and S of the hwy from the refinery and at other various locations. In addition, I may be pulling a groundwater sample to physically look at any product levels there. I will also inform Darrell, that we need an updated site map with well logs, etc., to show all new and old wells at the facility. I think we want the new RWs to be included and sampled similar to the rest of the RWs in the table that we put together for Navajo (i.e., sample schedule, etc.). I don't think we need a new report, but we do need at a minimum the above. Please contact me if you have questions or comments. Thank you.

From: Monzeglio, Hope, NMENV
Sent: Thursday, February 15, 2007 11:51 AM
To: Chavez, Carl J, EMNRD
Subject: RE: Navajo

Carl

I will get you the boring log information when I get back and look over the other information in your email. It will not be until next week. I am currently stuck CT until Saturday due to all the storms that went through the midwest and east coast.

Hope

Hope Monzeglio
 Environmental Specialist
 New Mexico Environment Department
 Hazardous Waste Bureau
 2905 Rodeo Park Drive East, BLDG 1
 Santa Fe NM 87505
 Phone: (505) 428-2545
 Fax: (505)-428-2567
hope.monzeglio@state.nm.us

From: Chavez, Carl J, EMNRD
Sent: Thu 2/8/2007 1:49 PM
To: Monzeglio, Hope, NMENV
Cc: Cobrain, Dave, NMENV; Price, Wayne, EMNRD
Subject: RE: Navajo

Hope:

Darrell Moore sent me a Oct. 31, 2006 letter addressing HWB-OCD discharge plan items before OCD could issue a new discharge plan. I believe HWB and OCD met to go over outstanding OCD items in the old discharge plan to get input from HWB and then we sent a e-mail on Aug. 14, 2006 to Navajo with our comments. The above letter was mailed to the OCD responding to our comments, but it appears that based on their investigation that Navajo has not submitted a report. The only official report I have received is dated December 2006, "SWMU-1/AOC Group 1 Additional Corrective Action Investigation Work plan RCRA Permit No. D048918817."

2/15/2007

I will send this over the letter to you today; however, I notice that boring logs were not included in the letter and the RW-11-01 - RW-11-08 designations do not entirely correspond. Please send me the boring information. Darrell also forwarded an old Sept. 1997 report that contained a map depicting the location of borings at the site, which also do not entirely correspond to the RW designations. Navajo also submitted a Oct. 2, 2006 "Response to Letter Dated August 17, 2006: Notice of Deficiency GW Monitoring Work Plan" that outlines wells to be monitored, frequency, etc.

Consequently, I do not believe that the OCD has received an investigation report based on the OCD's August 14, 2006 e-mail to Navajo. Please send me the boring logs. I think we need to look at Navajo's Oct. 2, 2006 reply w/ monitor frequency, etc. to work to include the new RWs. Let me know what you think? Not sure we need another report, but a new site map with all new wells, boring logs for new wells, etc. Thanks.

From: Monzeglio, Hope, NMENV
Sent: Monday, February 05, 2007 1:37 PM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Price, Wayne, EMNRD
Subject: Navajo

Carl

I just wanted to check in about Navajo and the investigation they did on Bolton Rd south of HWY 82 where they installed 8 recovery wells (RW-11-01 - RW-11-08). I received the boring logs as a response to an NMED letter but am not sure if an investigation report was submitted to OCD? If so can we get a copy. If not and you are expecting one, I can contact Darrell to make sure we are cc on the report. We want to make sure Navajo will collect depth to water/depth to product measurements when they are doing their sampling. I am not sure if OCD already requested this?

Thanks

Hope

Hope Monzeglio
 Environmental Specialist
 New Mexico Environment Department
 Hazardous Waste Bureau
 2905 Rodeo Park Drive East, BLDG 1
 Santa Fe NM 87505
 Phone: (505) 476-6045
 Main No.: (505)-476-6000
 Fax: (505)-476-6030
hope.monzeglio@state.nm.us

Websites:
New Mexico Environment Department
Hazardous Waste Bureau

Please note the new phone numbers

2/15/2007



REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS
(505) 746-5481 TRUCKING
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING
(505) 746-5451 EXEC/MKTG
(505) 746-5421 ENGINEERING
(505) 746-5480 PIPELINE

October 31, 2006

Mr. Carl J. Chavez, CHMM
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Subject: Update Report on Status of Hydrocarbon Investigation Required as a Condition of Discharge Plan Renewal, GW-028, Artesia Refinery

This letter report provides the OCD with information on progress of the above investigation as outlined in our letter of July 25, 2006 and your e-mail of August 14, 2006. Some of the required information listed in that e-mail has been submitted to the Division. This letter report responds to and provides information on the status of other elements of the investigation together with work that is scheduled for November 2006 and later.

- Item ii. Investigation work between MW-52 and KWB-2R and between the midpoint and KWB-4. A boring was advanced to a depth of 45 ft. at the location shown in Figure 1. Borehole samples and cuttings had hydrocarbon staining and odor mainly from a depth of 20 to 30 ft., but no hydrocarbon product was detected. Soil samples were collected that show minimal impact from 33 to 34 ft. and none at 45 ft. (Table 1). The boring was not completed as a recovery well and was plugged with bentonite (hydrated)*.
- Item iv. To determine whether product is moving beneath the recovery trench in the area along Bolton Road immediately north of highway 82, Navajo was prepared to begin investigation of the area on the east side of Bolton Road and had staked borehole locations on October 11 and performed One-call notification. However, construction of a warehouse and yard by Chase Farms was underway at the site and heavy equipment was located and moving over the drilling locations. After discussions with Chase, it was determined that most of their heavy equipment will have completed work by mid-November so borehole investigation will recommence at that time.

* Due to a software failure on Monday evening (10/30) printing of existing and new borehole logs was not possible for inclusion in this report. They will be provided as soon as the program is up and running again which will very likely be tomorrow (Wednesday, 11/01) or Thursday.

Regarding investigation in the Chase Farms pecan orchard, as mentioned in the Navajo July 25, 2006 letter, presence of heavy equipment in the orchard to install a trench is very unlikely given the existence of mature trees. During our recent groundwater sampling event we could not get equipment in to sample the wells and they were hand bailed. There is a slim possibility that Navajo may be allowed to drill investigatory borings and complete additional wells following the harvest season and during the dormant period when the trees are trimmed so as to maximize pecan production the following season. Navajo will approach Mr. Chase regarding that possibility, but additional work before the harvest is completed is not a possibility.

- Item v. OCD suggests that Navajo drill a well in the farmer's field to detect hydrocarbons. The field is an active agricultural farm; Navajo has lost wells in similar areas (e.g. KWB-2A and 2B) due to crop rotation and routine farm activities. We also have monitor wells downgradient from the field to detect any migration to that area.

Beginning in 1991, Navajo investigated and documented the presence of hydrocarbons in the area emanating from the refinery and installed the trenches along Bolton Road to capture such hydrocarbons. There is no evidence that any hydrocarbons are the result of any cause (e.g. pipeline leak) other than migration from the refinery.

We are including a large volume of material including maps and borehole logs showing the locations drilled and the resultant presence or absence of petroleum hydrocarbons. The migration of the hydrocarbons has been documented (in reports to the US EPA and NMED) as being due to the existence of near-surface buried braided stream channels of high permeability material surrounded by very low permeability clays and clayey silts. The channels are a result of stream flow and movement of clastic material in the Eagle Draw drainage, which begins in the Sacramento foothills to the west of Artesia.

There is no surface expression of these channels, which are characterized by sands and gravels ranging from less than one inch to rounded limestone cobbles several inches in diameter. The channels are random in both vertical and horizontal directions. Gravel found in a borehole at a depth of 20 to 25 ft. may not be present in a borehole 25 to 30 ft. away. Further complicating the lithology is the presence of caliche at various depths, usually associated with clay, which provides for some saturation in fracture zones but little permeability.

Because tracing individual channels, which change direction and lithology with distance, is very difficult, trenches were installed along Bolton Road perpendicular to the direction of groundwater flow to capture hydrocarbons by allowing them to move to permeable gravel beds installed in the trenches where

they could be recovered using skimmer pumps. Lower water tables and limitations on excavation using surface methods (i.e. trackhoe) limit the effective depth to approximately 25 to 28 ft. As noted in previous correspondence, OCD's concern regarding possible movement of hydrocarbons beneath the trench is being addressed by placement of interception/recovery wells.

OCD recommended that a series of wells be located along the south side of highway 82 west of Bolton Road. Navajo considered the suggestion and declines to install boreholes in that location for the following reasons. First boreholes placed in an west-east direction would only capture hydrocarbons in the immediate vicinity as the general groundwater flow is also west to east (with a slight southeasterly component in that area). As mentioned above, wells placed perpendicular to the direction of flow provide the best opportunity to capture hydrocarbons. Second, the wells would not capture product that may have already migrated past that area to the vicinity of the existing recovery trench. Third, the presence of buried petroleum product pipelines in the ROW complicates drilling and placement in the farmers field has limitations as described above.

To address the possible problem of underflow beneath the south Bolton Road trenches, earlier this month Navajo drilled ten investigatory boreholes on the east side of Bolton Road south of Highway 82 and completed eight of them as interception/recovery wells (Figure 2). Boreholes BH-06-03 and BH-06-11 were plugged back to the surface with bentonite (borehole logs not available, see footnote previous page). The other eight boreholes either had hydrocarbon saturation or had sufficient show of hydrocarbons that they were completed as interception/recovery wells.

Below 15 ft., the borehole logs (to be provided later as described above) show thick vertical zones of clay and thin zones of fractured caliche, gravelly clay and occasional fine-grained sands. Water and petroleum hydrocarbon (when present) is found in the fractured caliche and gravelly clay. These more permeable zones are seldom more than a few inches thick while the clay may be several feet thick. Though the clay is sandwiched between water saturated zones, it is commonly very dry, very stiff and quite plastic when moisture is added. Though the clay sometimes was gray and had a strong H/C odor very little saturation was noted.

Table 1 shows the result of hydrocarbon analysis of the samples; very little if any hydrocarbons were found beneath a depth of about 30 ft. BH-06-06 and 06-07 were the exceptions with contamination from 33-34 ft. in 06-06 and at 38-39 ft. in 06-07. Though precautions to prevent cross-contamination were taken (the sample was collected following trimming to remove soil in direct contact with the core barrel), the latter sample may have been affected in that manner; the two samples taken immediately above were clean.

In summary, all borehole samples had some degree of hydrocarbon impact, ranging from staining and odor to hydrocarbon product saturation. In addition to MW-57, the following boreholes were observed to show product saturation in one or more samples: BH-06-04, 06-06, 06-07, 06-08, and 06-10.

*What is the RW designation?
RW 11-06-2
4-10*

Except for boreholes 06-03 and 06-11 which were plugged with bentonite, the boreholes were completed as interception/recovery wells with 4-in. diameter casing and 15 ft. of screen from about 17 to 32 ft. The wells were measured and developed on October 20. Wells 06-06 through 06-09 were observed to have a hydrocarbon sheen and odor but the sheen was not thick enough to measure. Monitor well MW-57 was gauged on September 28 and 0.59 ft. of product was measured. Navajo has contract staff who inspect and recover hydrocarbon product from the wells/trenches on a routine basis.

Also, we have enclosed a copy of a document entitled Borehole Lithologic Data 1991-1997. This document contains dozens of borehole logs that were drilled to delineate the plumes east of the refinery. This document should give OCD a better understanding of the work we have already done in this area.

The borehole logs absent from this report will be provided via e-mail as soon as the software problem is resolved, which should be in the next day or so.

If you have any questions regarding this material, please contact me at (505) 748-3311.

Sincerely,
NAVAJO REFINING COMPANY, LLC



Darrell Moore
Environmental Manager for Water and Waste
encl. Figures 1, Figure 2, Table 1, Report-Borehole Lithologic Data 1991-1997.

cc. David Boyer, Safety and Environmental Solutions

SECTION 9

US HIGHWAY 82

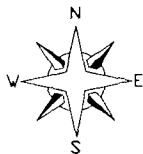
CATTLE GUARD

SECTION 16

RW-11

- BH-06-11
- BH-06-10
- BH-06-09
- BH-06-08
- BH-06-07
- BH-06-06
- BH-06-05
- BH-06-04
- + MW-57
- BH-06-02
- BH-06-03

KWB-9

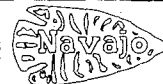


50' 0 50' 100' 200'

SCALE

DRAWING
TITLE

FIGURE 2
LOCATION OF BOLTON
ROAD BOREHOLES



NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	REV.
EJS	DB	1' = 100'-0"	0
DATE	APPR BY	DRAWING NUMBER	
10-31-06	-	90-49-E Edits	

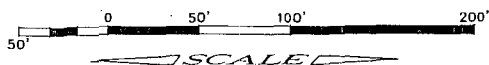
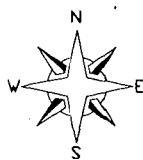
RW-15

KWB-4

△
RA-313

← APPROXIMATELY 2430' TO FREEMAN AVENUE | APPROXIMATELY 2820' TO BOLTON ROAD →

BH-06-01



US HIGHWAY 82

← APPROXIMATELY 456' TO KBW-2R →

← APPROXIMATELY 1156' TO MW-52 →

DRAWING
TITLE

FIGURE 1
LOCATION OF
BOREHOLE 06-01



NAVAJO REFINING CO.
ENGINEERING DEPARTMENT
P.O. DRAWER 159
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	REV.
EJS	DB	1' = 100'-0"	0
DATE	APPR BY	DRAWING NUMBER	
10-31-06	-	90-49-E Edits	

Table 1. Borehole Soil Sampling Results. Offsite Hydrocarbon Investigation, Fall 2006
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			Benzene	Toluene	µg/Kg Ethyl-benzene	Total Xylenes	Total BTX
			DRO	GRO	TPH					
BH-06-01	20-22	09/28/06	88	5.8	93.8	430	1,900	33,000	22,000	57,330
BH-06-01	33-34	09/28/06	<50	0.067	0.067	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-01	44-44.5	09/28/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-02	22-22.5	09/28/06	68	85	153	280	2,000	5,100	4,300	11,680
BH-06-02	27-28	09/28/06	<50	<0.050	ND	<1.0	1.9	<1.0	<3.0	1.9
BH-06-02	32-33	09/28/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-03	17-18	09/29/06	<50	<0.050	ND	<1.0	2.6	1.4	<3.0	4.0
BH-06-03	22-23	09/29/06	56	26	82	32	1,000	6,400	3,600	11,032
BH-06-03	27-28	09/29/06	<50	<0.050	ND	<1.0	2.3	1.2	<3.0	3.5
BH-06-03	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-04	16-17	09/29/06	<50	<0.050	ND	1.2	<1.0	<1.0	<3.0	1.2
BH-06-04	23-24	09/29/06	73	310	383	2,100	5,900	64,000	34,000	106,000
BH-06-04	27-28	09/29/06	<50	0.058	0.058	<1.0	<1.0	1.6	3.7	5.3
BH-06-04	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	21-22	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	26-27	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	32-33	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	37-38	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-06	22-23	10/04/06	<50	110	110	270	1,000	10,000	2,500	13,770
BH-06-06	28-29	10/04/06	150	350	500	1,500	2,100	26,000	12,000	41,600
BH-06-06	33-34	10/04/06	53	350	403	2,300	1,500	21,000	6,400	31,200
BH-06-06	37-38	10/04/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	20-25	10/05/06	No sample, H/C product saturated			--	--	--	--	--
BH-06-07	28-29	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	32-33	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	38-39	10/05/06	<50	0.12	0.12	16	48	250	370	684
BH-06-08	16	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	23-24	10/09/06	200	260	460	85	600	6,100	4,900	11,685
BH-06-08	27-28	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	33-34	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	37-38	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	17	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	23-24	10/10/06	<50	<0.050	ND	<1.0	3.2	<1.0	<3.0	3.2
BH-06-09	27-28	10/10/06	<50	<0.050	ND	<1.0	3.0	1.0	<3.0	4.0
BH-06-09	33-34	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	37-38	10/10/06	<50	<0.050	ND	<1.0	<1.0	4.3	<3.0	4.3
BH-06-10	17-18	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	23-24	10/11/06	81	36	117	1.9	610	590	1,400	2,602
BH-06-10	27-28	10/11/06	<50	<0.050	ND	<1.0	58	35	19	112
BH-06-10	33-34	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	38-39	10/11/06	<50	<0.050	ND	<1.0	1.6	<1.0	<3.0	1.6

Table 1. Borehole Soil Sampling Results, Offsite Hydrocarbon Investigation, Fall 2006
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			µg/Kg				
			DRO	GRO	TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
BH-06-11	18-19	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	23-24	10/12/06	<50	15	15	23	620	440	1,600	2,683
BH-06-11	29-30	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	33-34	10/12/06	<50	<0.050	ND	<1.0	3.4	<1.0	3.0	6.4
BH-06-11	39-40	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
TPH - Total Petroleum Hydrocarbons, sum of DRO + GRO										
DRO - Diesel Range Organics										
GRO - Gasoline Range Organics										
ND - Not detected										
TPH analysis using EPA SW-846 method SW-8015B (modified)										
BTEX analysis using EPA SW-846 method SW-8021B										
Analyses performed by e-Lab, Houston, Texas										