



**NEW MEXICO
ENVIRONMENT DEPARTMENT**



Surface Water Quality Bureau

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BUTCH TONGATE
Deputy Secretary

TOM SKIBITSKI
Acting Director
Resource Protection Division

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

February 15, 2013

Mr. Michael McKee, Vice President and Refinery Manager
Navajo Refining Company, LLC
P.O. Box 159
501 East Main Street
Artesia, NM 88211-0159

Re: Minor Industrial, SIC 2911, NPDES Industrial User Compliance Evaluation Inspection, Navajo Refining Company LLC, Artesia, New Mexico, January 22, 2013

Dear Mr. McKee,

Enclosed, please find a copy of the report for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas, for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the Clean Water Act.

Problems noted during this inspection are discussed in the Further Explanations section of this inspection report. You are encouraged to review the inspection report, and required to correct any problems noted during the inspection, and to modify your operational and/or administrative procedures, as appropriate. Further, you are encouraged to notify, in writing, both USEPA (Diana McDonald, USEPA (6EN-WC), 1445 Ross Ave., Dallas, TX 75202) and NMED (at the above address) regarding modifications and compliance schedules.

Thank you for the cooperation and assistance of Mr. Michael Holder and Mr. Robert Combs during this inspection. If you have any questions about this inspection report, please contact me at sarah.holcomb@state.nm.us or 505-222-9587.

Sincerely,
/s/ Sarah Holcomb
Sarah Holcomb
Surface Water Quality Bureau

Cc: Rashida Bowlin, USEPA (6EN-AS) by email	Jerry Schoeppner, Chief, NMED GWQB (by email)
Diana McDonald, USEPA (6EN-WM) by email	John Kieling, Chief, NMED HWB (by email)
Hannah Branning, USEPA (6EN-AS) by email	Carl Chavez, ENMRD (by email)
Darlene Whitten-Hill, USEPA (6EN-AS) by email	John Penland, USEPA, by email
Carol Peters-Wagnon, USEPA (6EN-WM) by email	Rudy Molina, USEPA (6EN-P) by email
Larry Giglio, USEPA (6EN-PP) by email	Anthony Loston, USEPA (6EN-WM) by email
Michael Kesler, NMED Dist. 3 Mgr, by email	Mayor Phil Burch, City of Artesia PO Box 1310, Artesia, NM 88211-1310



NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code	NPDES	yr/mo/day	Inspec. Type	Inspector	Fac Type
1 <input type="text" value="N"/> 2 <input type="text" value="5"/> 3 <input type="text" value="N"/> <input type="text" value="M"/> <input type="text" value="U"/> 4 <input type="text" value="0"/> <input type="text" value="0"/> 5 <input type="text" value="1"/> 6 <input type="text" value="8"/> 7 <input type="text" value="4"/> 8 <input type="text" value="2"/> 9 <input type="text" value="1"/> 10 <input type="text" value="3"/> 11 <input type="text" value="0"/> 12 <input type="text" value="1"/> 13 <input type="text" value="2"/> 14 <input type="text" value="2"/> 15 <input type="text" value="17"/> 16 <input type="text" value="3"/> 17 <input type="text" value="S"/> 18 <input type="text" value="2"/> 19 <input type="text" value="2"/> 20 <input type="text" value="2"/>					
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Inspection Work Days	Facility Evaluation Rating	BI	QA	Reserved	
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Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Navajo Refining Company, LLC, 501 Main Street, Artesia, NM, Eddy County: From Roswell, take SE Main St/US-285 approximately 39 miles to Artesia. Turn east on E. Main St./US-82. Facility entrance is on the left.	Entry Time /Date 1300 hours / 1-22-2013	Permit Effective Date NA
	Exit Time/Date 1800 hours / 1-22-2013	Permit Expiration Date NA
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Mr. Michael Holder, Environmental Manager, HollyFrontier (575) 746-5487 Mr. Robert Combs, Environmental Specialist, HollyFrontier (575) 746-5382	Other Facility Data GPS: N. 32° 50' 33.96" W. -104° 23' 26.36" SIC: 2911	
Name, Address of Responsible Official/Title/Phone and Fax Number Mr. Michael McKee, Vice President and Refinery Manager (575) 748-3311 PO Box 159, Artesia, NM 88211-0159	Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> *	

Section C: Areas Evaluated During Inspection (S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

N	Permit	U	Flow Measurement	M	Operations & Maintenance	N	CSO/SSO
S	Records/Reports	M	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
M	Facility Site Review	N	Compliance Schedules	U	Pretreatment	N	Multimedia
U	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

- Inspectors entered the facility at 1300 hours on January 22, 2013 and conducted an entrance interview with Mr. Mike Holder, Environmental Manager, and Mr. Robert Combs, Environmental Specialist, where they made introductions, presented credentials and discussed the purpose of the inspection.
- An exit interview was conducted with Mr. Holder and Mr. Combs at approximately 1730-1800 hours at the facility on January 22, 2013.
- Please see report for further details.

Name(s) and Signature(s) of Inspector(s) Sarah Holcomb /s/ Sarah Holcomb	Agency/Office/Telephone/Fax 505-222-9587	Date 2-15-2013
Signature of Management QA Reviewer Richard Powell /s/ Richard Powell	Agency/Office/Phone and Fax Numbers 505-827-2798	Date 2-15-2013

Industrial User Compliance Evaluation Inspection
Navajo Refining Company, LLC
Permit Number: NMU001842
January 22, 2013

Introduction

On January 22, 2013, Sarah Holcomb of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB), accompanied by Bruce Yurdin and Barbara Cooney (also of NMED SWQB) conducted an Industrial User Compliance Evaluation Inspection (CEI) at the Navajo Refining Company. Navajo Refining has been discharging petroleum refinery wastewater to the Artesia Wastewater Treatment Plant (WWTP) since approximately 1994. The flow rates of discharge have changed during that time, but generally about 20,000 gallons per day of refinery wastewater is sent to the city's WWTP. This type of discharge is regulated under the Federal Clean Water Act, Section 402, of the National Pollutant Discharge Elimination System (NPDES) permit program, and more specifically as a categorical industrial user in 40 CFR Part 403 and 419, under the NPDES effluent limitations guidelines. The refinery wastewater discharge is sent to the Artesia WWTP, which does have an NPDES permit (Permit number NM0022268), which regulates the WWTP discharge to the Pecos River in the Lower Pecos Basin in Segment 20.6.4.206 according to the *State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC*. This segment includes the designated uses of irrigation, livestock watering, wildlife habitat, secondary contact and warmwater aquatic life.

The NMED performs a certain number of CEIs for the U.S. Environmental Protection Agency (USEPA), Region VI, under the NPDES permit program, in accordance with the federal Clean Water Act. USEPA uses these inspections to determine compliance with the NPDES permit program. This inspection report is based on information provided by the permittee's representatives, observations made by the NMED inspector, and records and reports kept by the permittee and/or NMED.

Upon arrival at the facility at 1300 hours on January 22, 2013, the inspectors met Mr. Michael Holder, Environmental Manager and Mr. Robert Combs, Environmental Specialist. During the entrance interview, the inspector showed her credentials, made introductions and explained the purpose of the inspection. The inspector reviewed the facility's laboratory and records, and a tour of the facility commenced thereafter. An exit interview to discuss the preliminary findings of the inspection was conducted from approximately 1730-1800 hours on January 22, 2013 at the facility with Mr. Holder and Mr. Combs.

Treatment Scheme

Navajo Refining has been in operation at the Artesia location since 1929. The facility incorporates many processes to treat and refine crude oil which is received from the crude oil trunk (from West Texas, Oklahoma and New Mexico). The processes include crude distillation, vacuum distillation, fluid catalytic cracking, hydrofluoric alkylation, catalytic reforming, hydrodesulfurization, isomerization, sulfur recovery and product blending. The main products the refinery produces are gasoline and diesel, but they also produce asphalt, kerosene and fuel oil (#6) in smaller quantities. The facility is spread out over approximately 561 acres. Intake water is sourced primarily from the city of Artesia (approximately eight million gallons per day), and is supplemented with some groundwater. There is an onsite wastewater treatment facility which treats much of the wastewater generated; however, there are four wastewater streams generated in total, which are disposed in various ways. Please see attachment A for a schematic of the wastewater disposal scheme. Attachment A schematics were obtained from NMED Hazardous Waste Bureau staff on January 18, 2013. During normal operations, approximately 500 people are employed during the day and 200 people at night. The facility runs a 24 hour a day/7 day per week operation. The facility is currently in a turnaround (occurring from mid-January to the end of February), and, as a result Navajo had approximately 3,000 contractors on site at the time of this inspection.

The facility is subject to categorical limits under 40 CFR Part 419. Those limits for 419 Subpart C are set at a maximum of 100 mg/L oil and grease, and 100 mg/L ammonia, if the refinery is discharging to a publicly owned treatment works.

In 1998, a consent decree was issued to Navajo Refining for violation of RCRA laws. The facility had been disposing of benzene contaminated water in holding ponds approximately three miles from the main facility in Artesia. Under the final decree, the facility could not dispose of wastewater in those ponds, and also could not dispose of the wastewater in any location if it had a concentration of benzene higher than 400 parts per billion (ppb) and ammonia higher than 100 ppb.

On average, 15 gpm of on-site WWTP discharge and a maximum of 150 gpm of cooling tower blowdown is sent to the Artesia WWTP. Approximately 400 gpm is sent to the 3 non-hazardous injection wells permitted by EMNRD OCD.

There are four wastewater streams exiting the refinery at this time. The first wastewater stream is the reverse osmosis reject water (which does not come into contact with any part of the process). This is currently sent to farm fields adjacent to the facility for infiltration under an Energy, Minerals and Natural Resources Department (EMNRD)/Oil Conservation Division (OCD) permit. However, this permit was just reissued and OCD indicated to Navajo that they had three years to find an alternate disposal method for this particular wastestream. As of the writing of this inspection report, Navajo is approximately six months into that compliance schedule.

The second wastewater stream is comprised of reverse osmosis water which is either used as cooling tower makeup, or boiler feed/boiler blowdown water. The cooling tower/boiler blowdown water is treated with bleach and Cophos as a scaling agent (Cophos can contain trisodium phosphate, disodium phosphate and sodium hydroxide) The MSDS for Cophos is included as Attachment L. The facility discontinued the use of hexavalent chromium as a scaling agent sometime around 1991. This particular wastewater stream can either be sent to the onsite wastewater treatment plant, or directly to the Artesia POTW.

The third wastewater stream is generated from the onsite wastewater treatment plant. Wastewater generated from the many processes at the facility is treated through desalters (in some cases) prior to arriving at the onsite wastewater treatment plant. The first unit is the American Petroleum Institute (API) unit. The API unit relies on the specific gravity of the substances being treated to remove the gross amounts of oil and suspended solids from the wastewater and can allegedly treat up to 80% of oil from refinery process wastewater. There are two scrapers in the unit to remove solids and to remove floating oil from the unit as well. The oil recovered from this unit is sent back through the refinery. The solids are processed through a centrifuge, and resulting wastewater from the centrifuge process is recycled to the API unit. The solids are removed to an offsite location via a third party hazardous waste disposal contractor. The water then proceeds from the API unit to one of two tanks, Tank 801 or Tank 836, which are used as Aggressive Biotreatment Units (ABUs). The tanks are highly aerated. The wastewater is then sent to the Dissolved Air Flotation (DAF) unit, which functions as a clarifier. After exiting the DAF, the wastewater (DAF float) is dewatered in two of five tanks presently onsite. The remaining three tanks are used for storage of the DAF float. These tanks are referred to as the TALON tanks. The tanks are periodically emptied and centrifuged to remove any liquid fraction, which is then sent back through the refinery. The water is then sent through walnut filters, and if needed, an activated carbon unit prior to discharge either in the facility's injection wells or to the Artesia WWTP. If one of the ABUs is down, the wastewater is sent through the activated carbon as a precaution. The wastewater leaving the onsite wastewater treatment plant is metered by a Carlon H-400 meter. This meter is installed on Navajo Refining property and was inspected by NMED during this inspection. This area is fenced, gated and only accessible by the Artesia WWTP staff.

The fourth wastewater stream is a domestic sanitary sewer line that goes directly to Artesia's sanitary sewer. This line is not metered or sampled by the POTW or by Navajo Refining.

There is an on-site laboratory for use in the refining process. The lab analyzes sour crude oil and finished products for quality control purposes. The laboratory was under re-configuration at the time of this inspection. According to facility representatives, it is common practice to dispose of various laboratory solvents (including methanol, acetone, toluene and carbon disulfide), reagents and acids to the laboratory sinks. The lab sinks flow into the refinery process sewer and the wastewater is treated at the on-site wastewater treatment plant. Spent laboratory samples are dumped outside into a process sump (due to concerns about high H₂S). The sump is regularly pumped into the refinery sewer and sent to the on-site wastewater treatment plant. This sump could potentially be a source of contaminated stormwater.

Further Explanations

Navajo Refining initially began discharging process wastewater to the city of Artesia in February 1994. Please see Attachment F for the original agreement. This agreement has been amended and updated over time. The current agreement expires this May.

Navajo is currently conducting a turnaround, focusing on many units within the facility, as follows:

- Naptha Hydrotreater (removes H₂S from naptha)
- Amine Generation Unit (assists in stripping of H₂S from sour gas)
- Low Pressure Fuel Gas Contactor (removes H₂S from off-gas from process units)
- HF Alky (introduces hydrogen into hydrocarbon molecules)
- Fluid Catalytic Cracking Unit (breaks bigger molecules into smaller molecules)
- Tail Gas Unit (reduces SO₂ emissions)
- Naptha Desulfurizer (removes H₂S from naptha)
- Skid Treater (removes sulfur)
- ROSE Unit (Residual oil supercritical extraction); removes hydrocarbons for refining; produces asphalts
- Sulfur Recovery Unit (SRU) #2 (removes H₂S and produces elemental sulfur)
- SRU 3#
- Distillate Hydrotreater (removes H₂S from diesel)
- North Plant Utilities
- Propane Butane Column (separates propane and butane)
- Gas Oil Desulfurizer (removes H₂S from gas oil/kerosene/diesel)
- Alky Flare System

The City of Artesia does have a current pretreatment ordinance but does not have local limits in place. During the exit interview at the inspection of the Artesia WWTP the day after this inspection, Mr. Byron Landfair, the city's Infrastructure Director, indicated that a new pretreatment ordinance was in draft form, and a new agreement with Navajo was also in draft form. The draft agreement is included with this report as Attachment H.

On January 23, 2013, the Artesia WWTP experienced an upset due to an accidental discharge of oily residues and cleaning chemicals from Navajo Refining. This upset caused the Artesia WWTP to exceed their permit limit for E. coli, although all other parameters seemed not to have been affected. Please see Attachment G for the lab data from this incident, as well as lab data concerning Navajo's discharge to the Artesia WWTP in the past. Also, please see Attachment D for a description of the incident from NMED's Ground Water Quality Bureau.

Please see the attached checklist for a discussion of the findings at the Navajo Refinery facility.

Also, Navajo Refining does not have coverage under the Multi Sector General Permit due to the location of 3 retention ponds on the facility grounds. There were no engineering calculations available to review to determine what size storm event the ponds were capable of holding, but the facility also maintains an earthen berm along the north and east sides of the facility in the event that the ponds overflow. The facility representative stated that no stormwater is capable of leaving the facility.

INDUSTRIAL INSPECTION REPORT

SECTION A – PERMIT SUMMARY

1. Company Name: Navajo Refining Company LLC
2. Facility Address: 501 E. Main Street, Artesia, NM 88210
3. Mailing Address: PO Box 159, Artesia, NM 88211-0159
4. Permit Number: NA
5. Issuance Date: NA
6. Expiration Date: NA
7. Highest Ranking Official: Mr. Michael McKee, Vice President and Refinery Manager
8. Responsible Official: Mr. Michael McKee
9. Facility Representative: Mr. Michael Holder, Environmental Manager
Mr. Robert Combs, Environmental Specialist
10. Fax Number: 575-748-6742
11. Email Address: mike.holder@hollyfrontier.com
12. Company Owner: HollyFrontier
13. Is property owned or leased? Owned
14. Does the Industrial User have a current copy of the discharge permit on file? NA
15. Does the permit reflect the correct name and mailing address of the industry? NA
16. Are the descriptions of the outfalls in the discharge permit accurate and reflect the actual number and location of the discharge points? NA
17. Does the IU maintain any other environmental permits? Yes:

RCRA LQG
Title V, NSR
ENMRD, 3 Class I Injection Wells
NMED GWQB Discharge Permit

18. How is the IU categorized? (Categorical, Significant Industrial User, Monitored Industry)
Categorical User under 40 CFR 419

19. What is the principal product generated by the IU? Gasoline, diesel, asphalt, kerosene and fuel oil (#6)

20. What are the raw materials used the facility's processes? Crude oil

21. Have the principal products or production rates changed from the last inspection? NA

22. Is the IU going through or planning to make any changes in their processes that will cause a new, different, or increased discharge? The facility is currently going through their "turnaround" process, which began on January 14th and is planned until the end of February. During this process, the facility will do cleanups and repairs. This process did result in an accidental discharge to the Artesia WWTP on January 23.

23. Does the IU maintain floor plans showing the location of process lines/equipment, treatment systems, chemical storage, waste storage, offices, and use for each room or area. Yes

24. Does the IU maintain sewer diagrams of the facility of the locations where industrial wastewater enters sewer lines, where the facility sewer lines connect to the city's sewer mains, of clean-outs, of sampling ports, of manholes, of sinks, of floor drains, etc? Yes

25. Does the IU maintain flow diagrams of the process lines/equipment and pretreatment systems that show the flow of product and water? This shall include the process of each process line/equipment, chemicals used, sizing and flow. Yes – please see attachment A.

26. Does the IU maintain a standard operating procedure for the pretreatment system that shall include operating and maintenance schedules? This is only required if a pretreatment system is present or required. Yes. Maintenance occurs as needed and tanks are inspected every 10 years or as recommended by previous inspection.

SECTION B – RECORDS AND REPORTS

1. Is the IU required to self monitor? (If no, skip remainder of section) Yes

2. Does the IU have a Toxic Organic Management Plan (TOMP) in effect? No, not required.

3. Are Chain of Custody forms used? Yes

4. Does the IU maintain adequate chain of custody records that include:

Industry Name Yes

Physical Address	<u>Yes</u>
Outfall/Sample Location	<u>Yes</u>
Date & Time Sampling Began	<u>Time not distinguished as beginning or ending</u>
Date & Time Sampling Ended	<u>Time not distinguished as beginning or ending</u>
Sampler's Name	<u>No</u>
Sampler's Signature	<u>Yes</u>
Sampler's Affiliation	<u>Yes</u>
Sample Type: Grab, Time Weighted Composite, Flow Weighted Composite	<u>Not indicated</u>
Number of Parts/Sample Intervals	<u>Yes/No intervals indicated</u>
Type of Sampler Used	<u>Not indicated</u>
Sample Container Size and Material	<u>Not indicated</u>
Preservative	<u>Not indicated</u>
Analysis Requested	<u>Yes</u>
Field Data with Date and Time	<u>Not indicated</u>
Received/Relinquished Dates and Time	<u>Yes</u>
Printed Name	<u>Yes</u>
Signature	<u>Yes</u>

5. Are grab samples taken when required? Yes
6. Are composite samples taken when required? NA
7. Are sampling locations adequate to collect a representative sample? They are representative of the onsite wastewater effluent, but may not encompass other wastelines which are also entering the city's influent.
8. Do the parameters and frequencies agree with those as set forth in the permit? NA
9. What laboratory is contracted to analyze samples taken from the IU? Samples are analyzed by ALS Laboratory Group in Houston, TX.
10. Does the contract laboratory use 40 CFR 136 approved analytical testing methods? No for chromium (currently using 6020).
11. Does the contract use proper preservation techniques? Preservation not indicated on chain of custody forms. In follow up with Mr. Holder, he indicates that grab samples are taken and proper preservation is performed on those samples. Documentation should be updated to reflect this.
12. Are the sample holding times in conformance with 40 CFR 136.3? Yes
13. Does the contract laboratory practice quality control procedures? (duplicates, spikes, etc.) Not indicated on reports
14. Is the IU required to report flows? No

15. How is flow determined? (Provide make, model, totalizer or digital meter) Carlton H-400 (totalizer)
16. Is the flow measuring device properly calibrated? According to the city of Artesia representatives, the totalizing meter has not been professionally (third-party) calibrated. The calibration was performed by representatives of Navajo Refining who have experience doing calibrations.
17. Is the flow meter located to obtain a representative measurement? Yes, however, this does not account for flow coming to the plant via the sanitary sewer line.
18. Can the flow meter be by-passed? Not on this specific wastestream.
19. Does the IU maintain updated lists of chemicals used at the facility? Yes, please see attachment B.

SECTION C – CHEMICALS AND STORAGE

1. What chemicals are handled at the site? Please see attachment B.
2. How and where are virgin chemicals stored? Chemicals are typically stored next to the units where they are needed.
3. Are any liquids or solids generated from this facility disposed of by means other than discharge to the City's sanitary sewer system? Yes, solids are disposed of offsite by a third party contractor according to whether they are hazardous waste or not. They also dispose of RO reject water via infiltration in farm fields via an Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) permit. Process wastewater is also disposed into one of three injection wells, also permitted by OCD.
4. How and where are the liquids and solids stored? Solids are stored in either hazardous or non-hazardous storage tanks. Liquids are stored in various units according to the part of the refinery process they are in. Please see Attachment A.
5. Is there a current spill pollution prevention plan in effect? Yes, there is an SPCC plan in effect.

SECTION D – OPERATION AND MAINTENANCE

1. Is the process discharge a batch, continuous or combination? Continuous, although the amount fluctuates. Please see Attachment C.
2. What is the frequency and duration of the discharge? Please see Attachment C. This chart was obtained from Navajo Refining staff on the day of the inspection.

3. Is the process wastewater treated prior to being discharged to the sanitary sewer? Yes
4. What type of treatment does the process wastewater undergo before being discharge? (Sedimentation, Neutralization, Filtration, Chemical, None, Other) Oil filtration, Clarification, further filtration, activated carbon treatment.
5. Explain each step of the treatment system: Please see treatment explanation above.
6. What type of maintenance do the treatment units require? Periodic removal of sludge that scrapers do not remove.
7. Who maintains the treatment units? A third party contractor employed by Navajo.
8. How often are treatment units cleaned and/or calibrated? Maintenance is performed as needed.
9. Is it possible to by-pass the waste treatment system? Yes. The sanitary sewer line does not receive treatment at the onsite wastewater treatment plant and is also not metered. It is possible to bypass the wastewater treatment plant on-site and send the boiler blowdown water directly to the Artesia WWTP.
10. Have any by-passes occurred? Yes. On January 23, 2013, during the NMED inspection, the refinery accidentally discharged oily residue and cleaning products to the Artesia WWTP. As a result, the WWTP experienced the inability to adequately treat the wastewater at the facility and experienced exceedances of their permit limits. Please see Attachment D.
11. Is the treatment unit equipped with an alarm in case of power failure? Yes
12. Is the treatment unit equipped with an alarm in case of equipment failure? (Hi/Lo, pH, Hi/Lo flow, pump alarms, etc.) Describe alarm system. The alarm system is a Distributed Control System (DCS) system from Honeywell.
13. Does the IU generate waste sludge? Yes – considered K049 sludge.
14. Does the IU have a state or federal hazardous waste generator classification? Yes, Navajo is a LQG.
15. What types of sludge are found at this facility? (Class I, II, III...)? API Separator Sludge (K051) and sewer sludge (F037) are found at this facility.
16. How and where is the sludge stored? After centrifuging, the sludge is stored in tanks until a third party contractor takes the sludge offsite. Sludge is either taken to Rineco in Benton, AR (haz waste) or to S-Brothers in Hobbs, NM (DAF Float/non-hazardous).

17. How and where is the disposed? See above.
18. Are oils, paints, and/or chemical solvents utilized at this IU? Yes. The lab utilizes solvents for analyses, such as toluene, methanol, acetone, carbon disulfide.
19. How and where are the waste oils, paints, and chemical solvents stored? They are stored where needed in the laboratory, or under the sink.
20. How are waste oils, paints, and chemical solvents disposed? They are disposed to the laboratory sinks, which is then directed to the onsite wastewater treatment plant. This waste does comingle with process wastewater. Samples from the lab are disposed in a sump located outside the laboratory, and that sump is periodically discharged to Navajo's process sewer.
21. Are RCRA requirements being observed? According to an inspection report from John Penland of USEPA (inspection conducted in February 2012), there were areas of concern. I have attached Mr. Penland's table of items of concern from his report as Attachment E.
22. Has the facility been evaluated for the need of a Slug Load Discharge Plan (SLDP)?
No, but it appears that it would be appropriate in this case.

SECTION E – POLLUTION PREVENTION

1. Do any processes recycle or reuse water? (If yes, then describe) No.
2. Has the IU implemented any pollution prevention activities? Yes, they are reducing the amount of chemical that is used onsite. This information was obtained from TRI reports that were shared with the inspector.
3. Have employees been trained in pollution prevention activities? No.

NMED/SWQB

Official Photograph Log

Photo # 1

Photographer: Sarah Holcomb	Date: 1-22-2013	Time: 1434 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: Overview of the refinery from the North side of the facility, including an overview of one of the facility's stormwater detention ponds.		



NMED/SWQB

Official Photograph Log

Photo # 2

Photographer: Sarah Holcomb	Date: 1-22-2013	Time: 1435 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: View facing North of the retention berm. If the stormwater ponds were to overflow, the retention berm would prevent a stormwater discharge. Navajo relies on this measure to confirm that they do not need coverage under the NPDES Multi Sector General Permit for Stormwater Discharges.		



NMED/SWQB

Official Photograph Log

Photo # 3

Photographer: Barbara Cooney	Date: 1-22-2013	Time: 1543 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: The large tank in the background is one of two ABU as primary wastewater treatment. The API is off to the left (not pictured).		



NMED/SWQB

Official Photograph Log

Photo # 4

Photographer: Barbara Cooney	Date: 1-22-2013	Time: 1543 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: The tank labeled "806" is the DAF unit. The Siemens tanks are activated carbon filtration, available if needed.		



NMED/SWQB

Official Photograph Log

Photo # 5

Photographer: Sarah Holcomb	Date: 1-22-2013	Time: 1614 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: Navajo's internal sampling point location.		



NMED/SWQB

Official Photograph Log

Photo # 6

Photographer: Sarah Holcomb	Date: 1-22-2013	Time: 1516 hours
City/County: Artesia/Eddy County		
Location: Navajo Refining Company, LLC		
Subject: Carlon H-400 effluent meter installed at the city-only access point from Navajo to the City of Artesia sewer line.		



NMED/SWQB

Official Photograph Log

Photo # 7

Photographer: Sarah Holcomb	Date: 1-23-2013	Time: 0934/0942 hours
City/County: Artesia/Eddy County		
Location: Artesia WWTP		
Subject: The top picture is of the oxidation ditch that is in use and hydraulically overloaded. The bottom picture is of the second oxidation ditch available and not in use. Also, please note the color of the wastewater – inspectors noted shearing in this basin.		

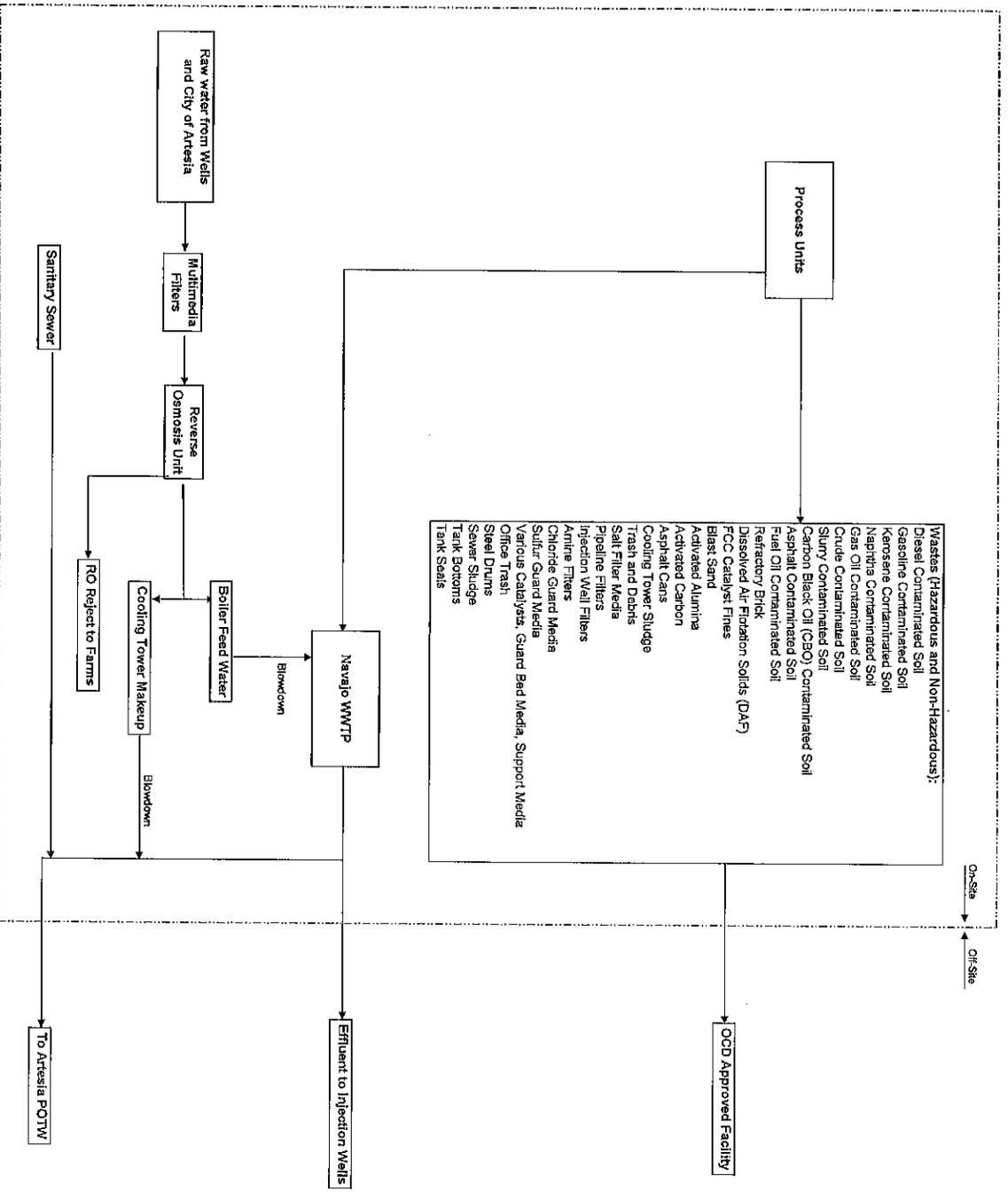


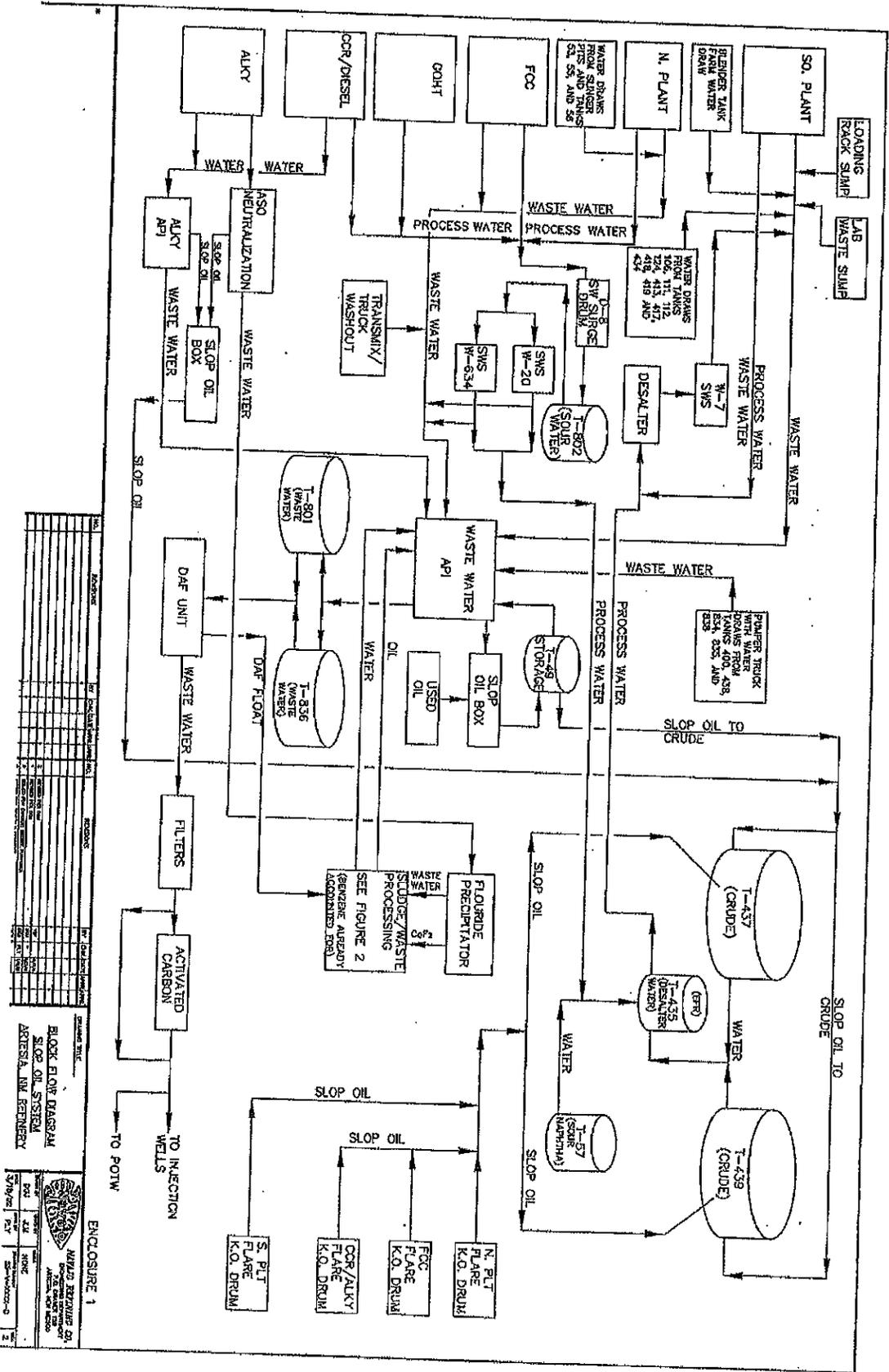
List of Attachments

Attachment A	<ol style="list-style-type: none"> 1. Overview diagram of Navajo Refining process 2. Detailed diagram of Navajo Refining wastewater treatment scheme 3. Navajo Refining solids treatment scheme
Attachment B	List of chemicals used at Navajo Refining, according to TRI submittal to NM Department of Homeland Security for 2010
Attachment C	Chart showing flow rates from Navajo Refining to Artesia WWTP from 2009 to 2013
Attachment D	Description of upset at Artesia WWTP from Robert George, NMED GWQB
Attachment E	Excerpt from John Penland's (USEPA R6 RCRA) inspection report from February 2012 noting his concerns from that inspection.
Attachment F	Original 1994 agreement between Navajo Refining and the City of Artesia for acceptance of industrial wastewater from the refinery.
Attachment G	<ol style="list-style-type: none"> 1. Lab data reported to NMED GWQB from the upset at the Artesia WWTP on 1-23-2013 2. Summary of sampling data obtained by Artesia staff from the city-only accessible sampling point outside Navajo Refinery's boundary. 3. Excerpt from a May 2012 memo requesting to extend the current MOU between the City and Navajo – lab data showing historical discharge quality.
Attachment H	Draft MOU between the City and Navajo for acceptance of industrial wastewater at the Artesia WWTP.
Attachment I	The original 1995 Baseline Monitoring Report submitted to EPA from Navajo Refining.
Attachment J	<ol style="list-style-type: none"> 1. Summary of RO Reject water quality from EMNRD OCD documents 2. Summary of 419 data reported to EPA from 2010-2012
Attachment K	Analyses of all products produced (types and quantities) from Navajo Refining from 2010-2012.
Attachment L	MSDS for Cophos: Boiler blowdown scaling agent

Attachment A

Artesia Facility Water and Waste Handling





ENCLOSURE 1

MAKING REVISIONS TO
BLOCK FLOU DIAGRAM
SLOP OIL SYSTEM
ACTIVATED CARBON RETENERY

DATE: 10/15/80
BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]

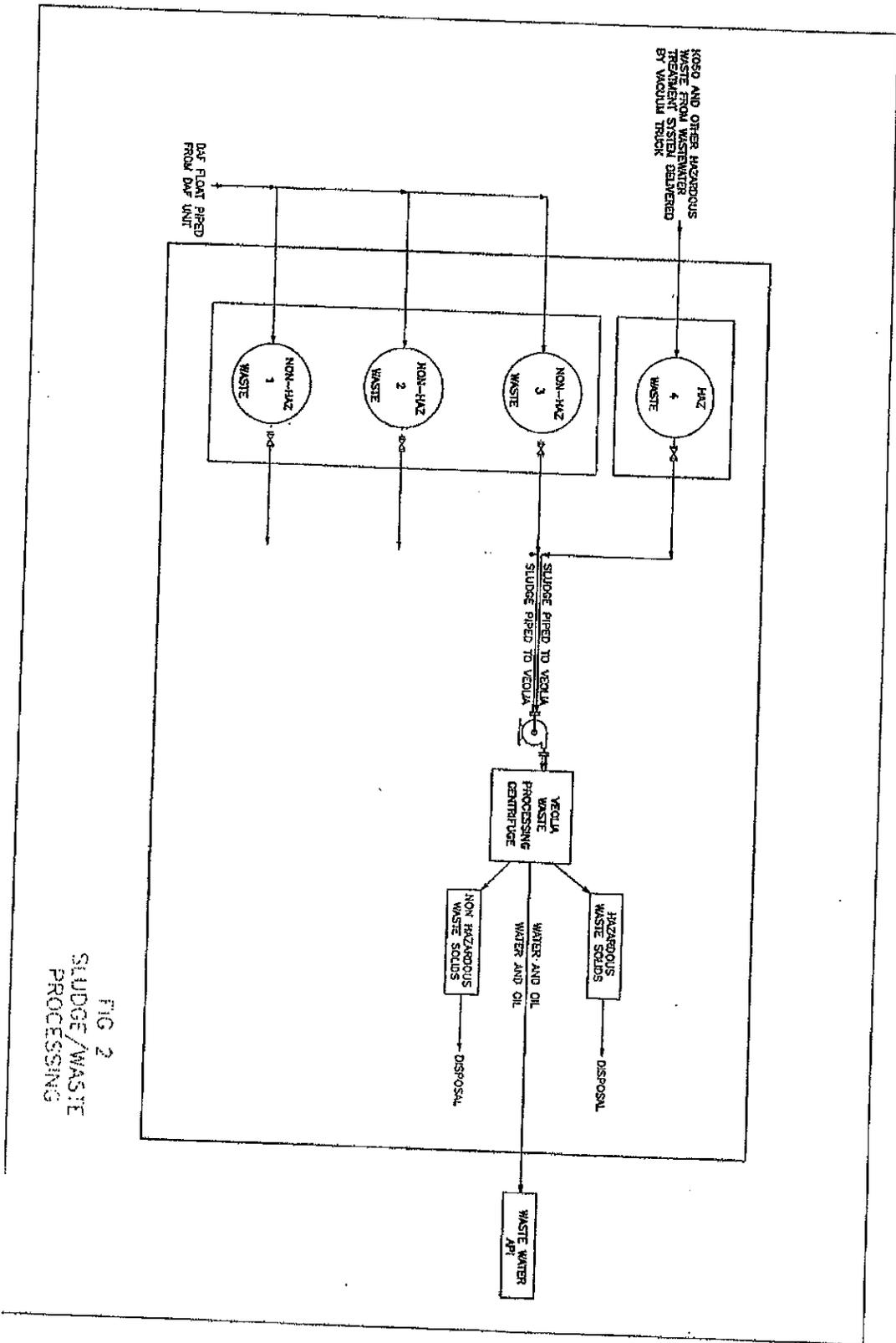


FIG 2
SLUDGE/WASTE
PROCESSING

Attachment B

Signature Certification for State Diskette Submission

NAVAJO REFINING CO
501 E MAIN ST
ARTESIA, NM 88210
TRIFID: 88210NVJRF501EA

Certified Mail – Return Receipt
7010 3090 0002 4685 0025

June 30, 2011

Lee Shin
TRI Coordinator
New Mexico Department of Homeland Security and Emergency Management
PO Box 27111
Santa Fe, NM 87502

To Whom It May Concern:

Enclosed please find one (1) microcomputer diskette containing toxic chemical release reporting information for: ARTESIA REFINERY. This information is submitted as required under section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and the Pollution Prevention Act of 1990. A paper copy is also enclosed.

We are submitting a total of 30 chemical report(s) for our facility. These 30 chemical report(s) are described below:

Chemical Name	RY	CAS	Form	Revision	Withdrawal
Ammonia	2010	7664417	R	No	No
Cumene	2010	98828	R	No	No
Ethylene	2010	74851	R	No	No
Anthracene	2010	120127	R	No	No
Lead Compounds	2010	N420	R	No	No
Ethylbenzene	2010	100414	R	No	No
1,2,4-Trimethylbenzene	2010	95636	R	No	No
Hydrogen fluoride	2010	7664393	R	No	No
Zinc Compounds	2010	N982	R	No	No
Hydrochloric acid (1995 and after "Aci	2010	7647010	R	No	No
Toluene	2010	108883	R	No	No
Cyclohexane	2010	110827	R	No	No
Propylene	2010	115071	R	No	No
Dioxin and Dioxin-like Compounds	2010	N150	R	No	No
Mercury Compounds	2010	N458	R	No	No
Benzene	2010	71432	R	No	No
Tetrachloroethylene	2010	127184	R	No	No
Carbon disulfide	2010	75150	R	No	No
Xylene (mixed isomers)	2010	1330207	R	No	No
Benzo(g,h,i)perylene	2010	191242	R	No	No
Methanol	2010	67561	R	No	No
Carbonyl sulfide	2010	463581	R	No	No
Sulfuric acid - (1994 and after "Acid	2010	7664939	R	No	No
Styrene	2010	100425	R	No	No
Phenanthrene	2010	85018	R	No	No
Naphthalene	2010	91203	R	No	No
n-Hexane	2010	110543	R	No	No
Biphenyl	2010	92524	R	No	No
Molybdenum trioxide	2010	1313275	R	No	No
Polycyclic aromatic compounds	2010	N590	R	No	No

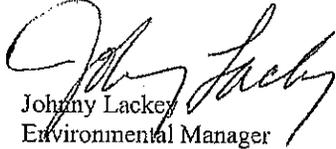
Our technical point of contact is:

DOUGLAS B. PRICE
575-746-5294
DOUG.PRICE@NAVAJO-REFINING.COM

and is available should any questions or problems arise in the processing of this diskette.

Because the enclosed diskette contains one or more Form R chemicals: I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

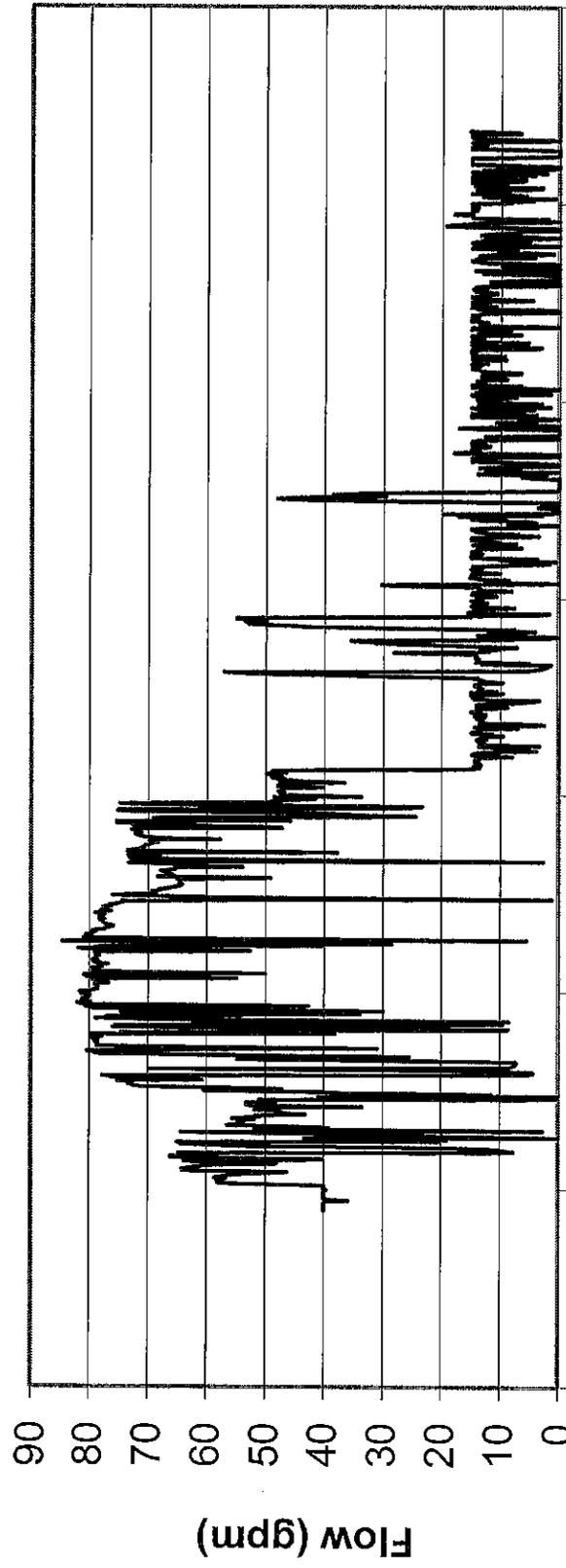
Sincerely,



Johnny Lackey
Environmental Manager

Attachment C

WWTP Discharge to POTW



7/6/2009 1/22/2010 8/10/2010 2/26/2011 9/14/2011 4/1/2012 10/18/2012 5/6/2013

Attachment D

From: [Yurdin, Bruce, NMENV](#)
To: [Holcomb, Sarah, NMENV](#); [Hogan, James, NMENV](#)
Subject: FW: Artesia WWTF
Date: Wednesday, January 30, 2013 11:30:56 AM
Attachments: [H300148_AWWTF.PDF](#)
[pc_2013.xls](#)

FYI.

bjy

From: George, Robert, NMENV
Sent: Wednesday, January 30, 2013 10:45 AM
To: Schoeppner, Jerry, NMENV; Pruett, Jennifer, NMENV; Marshall, Clint, NMENV
Cc: Davidson, Naomi, NMENV; Yurdin, Bruce, NMENV; Cooney, Barbara, NMENV
Subject: Artesia WWTF

Jerry,

Here's an update on the situation at the Artesia WWTF, as requested:

Last week on 1/23/13, the Navajo Refinery discharged an unknown volume of oily residue/cleaning products to the Artesia WWTF, impacting the biological process and impairing the effluent quality. At the time, the WWTF was discharging to the Pecos River under their NPDES permit and no reuse was occurring. The Refinery was largely shut down for rehabilitation/cleaning at the time. The Refinery's explanation for the discharge is that it was accidental. SWQB was conducting a routine inspection of the Refinery and the WWTF shortly after the discharge occurred.

Compliance samples run by the Artesia WWTF laboratory indicated that E. coli bacteria were too numerous to count (TNTC) on Thursday (1/24). This was attributed to an oily substance that was coating the Ultra Violet Light disinfection unit lamps and reducing their transmittance. Based upon SWQB's inspection photos, the effluent was turbid and green, but apparently only the E. coli was out of compliance. In response, Artesia's WWTF superintendent (Jake Prentiss) stopped the discharge to the NPDES outfall and directed the poorly treated effluent into the WWTF's clay lined storage pond, which has approximately 5 MG of capacity. The Artesia WWTF receives/treats approximately 1 MGD, so effluent could only be sent to the pond for a few days. Prentiss indicated that they did discharge a small volume (around 5,000 gallons) from the pond to a 160 acre land disposal area near the WWTF (which is covered under their DP). They consulted with the manufacturer of the UV system, have been repeatedly cleaning the lamps by hand and this apparently restored disinfection.

At this point, Prentiss feels the WWTF is rebounding sufficiently to allow them to go back to discharging to the NPDES outfall (surprising...but he claims they are in compliance). We directed the City to provide whatever data they have on the discharge from Navajo (see attached) or on the water stored in the pond and to hold the water in the pond until we can determine the next course of action. It seems apparent that discharging the water to the 160 acre land application site is the most appropriate way of dealing with it (this would volatilize the lighter hydrocarbons), but we will request that the City provide us with data for the water in the pond before we give them the go ahead (it might be necessary to disinfect it with chlorine or take other measures). We also need

them to come up with the infrastructure to distribute it over the land app area. Naomi and I will continue to work with the City to deal with the water in the pond and any other issues related to the WWTF recovery.

The unanswered question in all of this is; if this was an accident, where did Navajo intend to discharge this material in the first place? We will need to consider how to best control this type of problem as we move through the modification of the City's DP.

Let me know if you need additional info on this. Thanks

- Robert

Attachment E

caustic to Kinder Morgan Liquids Terminal and GATX Terminals from 2009 through 2011 (Appendix 13), but Navajo was unable to provide any additional information regarding the final disposition of this spent hazardous material.

AREAS OF CONCERN

The following table provides a summary of areas of concern noted during the inspection and communicated to the facility personnel during the closing conference.

Table 3 - Areas of Concern

	Areas of Concern	Documentation	Regulatory References	Comments
1	Failure to make a hazardous waste determination for laboratory generated spent solvent waste	Inspection interview notes	§262.11	F003 and F005 listed hazardous wastes discarded to process sewer
2	Failure to make a hazardous waste determination for waste laboratory generated sample wastes	Photo 1	§262.11	Samples discarded to process sewer
3	Improper storage of Used Oil	Photo 2	§279.22; §280	Used oil storage in an underground storage tank which does not meet the requirements of §280.20
4	Failure to close a Used Oil storage container stored outdoors.	Photo 3	20.4.1.1003.B(1) NMAC	Corrected onsite (Photo 4)
5	Failure to make a hazardous waste determination for unknown material discarded to the process sewer via the non-hazardous waste pad drain	Photo 37	§262.11	Material was not able to be identified during the onsite inspection.
6	Failure to keep a hazardous waste container closed except when adding or removing waste.	Photo 16	§262.34(a)(1)(i); §265.173(a)	Corrected onsite (Photo 21)
7	Failure to mark a hazardous waste container with the accumulation start date	Photos 16, 25, 29	§262.34(a)(2)	Corrected onsite (Photos 21, 35, 36)
8	Failure to mark a hazardous waste container with the words "Hazardous Waste"	Photo 16	§262.34(a)(3)	Corrected onsite (Photo 21)
9	Storage of hazardous waste in a leaking container	Photo 28	§262.34(a)(1)(i); §265.171	
10	Failure to contact the transporter	Appendix 12 -	§262.42(a)(1)	

	or designated facility after not receiving a signed copy of a hazardous waste manifest more than 35 days after shipment.	Manifest #: 001580146GBF, 004323542JJK, 004323552JJK, 001580150GBF		
11	Failure to file an exception report after not receiving a signed copy of a hazardous waste manifest more than 45 days after shipment	Appendix 12 – Manifest #: 004323542JJK, 004323552JJK	§262.42(a)(2)	
12	Transport of a hazardous waste to a facility which does not meet the definition of designated facility	Appendix 12 – Manifest #: 000482121GBF, 000482074GBF, 000482075GBF	§262.20(b)	Transport of pyrophoric waste from the Navajo injection well to the refinery along public roads.
13	Failure to complete the hazardous waste manifest	Appendix 12 – Manifest #: 004323513	§262.20(a)(1)	
14	Failure to submit a land disposal restriction notice meeting all requirements	Appendix 12 – Manifest #: 001580146GBF, 004323542JJK, 004323552JJK, 004323513JJK, 001580150GBF, 004553927FLE, 004091643JJK, 003223981FLE, 001580119GBF, 000591277VES	§268.7(a)(2)	
15	Failure to maintain documentation required to support an exemption under §261.2	Appendix 13	§261.2(f).	Spent caustic sold to Merichem

Attachment F

AGREEMENT

THIS AGREEMENT is entered into this 7th day of February, 1994, between the CITY OF ARTESIA, NEW MEXICO, a municipal corporation ("City"), and NAVAJO REFINING COMPANY, a Delaware corporation ("Navajo").

W I T N E S S E T H:

The parties hereto agree as follows:

1. City is a municipal corporation and the owner of the wastewater treatment plant located at Richey and Haldeman Roads.
2. Navajo is a refining company that produces effluent water, which is presently flowing into evaporation ponds east of the city.
3. City will accept water from Navajo's evaporation ponds for treatment in its wastewater treatment plant.
4. The water will be accepted on the basis of up to, but not to exceed fifteen (15) gallons per minute from the evaporation ponds.
5. Navajo will furnish the meters and metering necessary to determine the amounts of water being delivered to the wastewater treatment plant.
6. Navajo will furnish all the equipment and piping necessary for the transfer of their effluent water from the evaporation ponds to the wastewater treatment plant. City will provide easements and/or rights-of-way, as needed by Navajo, with said easements to continue as needed for the purposes of this Agreement.

7. Navajo will pay City the current rate being charged by the City per one thousand (1,000) gallons of effluent water metered into the City's wastewater treatment plant for treatment, and, in addition, all necessary testing required solely as a result of the City accepting Navajo's effluent water from the ponds, as may be required by the City, EPA or the New Mexico EID, will be paid for by Navajo.

8. To the extent reasonably determinable, Navajo will obtain the prior written permission from City for the treatment and testing of all effluent water from its evaporation ponds that exhibits characteristics which require special treatment.

9. Navajo, to the extent it discharges effluent water which exhibits characteristics which require special treatment, will pay and be responsible for the cost of any additional treatment methods which may be required as a result of the City accepting Navajo's effluent water from its evaporation ponds.

10. The discharge of the effluent water from Navajo's evaporation ponds shall be governed in accord with Chapter 13.16, Industrial Wastewater Ordinance under the Artesia Municipal Code, the New Mexico Environmental Improvement Division and United States EPA regulations.

11. The term of this agreement shall be one (1) year and shall automatically extend year by year, unless terminated by either party, giving notice at least sixty (60) days prior to the anniversary date. The City shall have the right to terminate this contract by giving thirty (30) days notice as absolutely required.

12. Each party shall indemnify and hold the other harmless in the event that one party shall become liable by virtue of the act or omission of the other party.

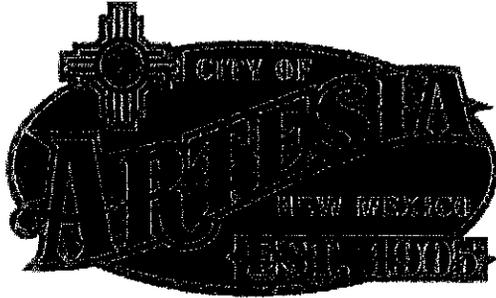
CITY OF ARTESIA

By: Ernest Thompson
Ernest Thompson, Mayor

NAVAJO REFINING COMPANY

By: [Signature]

Attachment G



THE CITY OF ARTESIA NEW MEXICO

Department of Infrastructure
612 N. Roselawn Ave.
Artesia, NM 88210

(575) 746-9821 Office
(575) 746-3110 Fax

January 31, 2013

Ms. Naomi Davidson NMENV

We went back to the Pecos River as of Tuesday 1/29/2013. The pond is not full now and is a couple of feet below the outtake or outfall to manhole before the land the area of 160 acres.

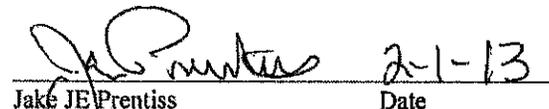
We had a TCTC on the 01/22/2013 Sample which read on the 01/23/2013 at about 3.30 pm that day. We did a E coli and Fecal on Friday 01/25/2013 that was read on Saturday 01.26/2013 at 15.00 Fecal was 0.444 and E coli was - 1 dilution as 266 -2 dilution of 75 that water to the pond. Cl-2 was 0.00 and 0.01 on Thursday and Friday.

THE TSS was 14 mg/l on day of e coli TNTC and BOD 5 was 17 mg/l . Patsy has done another set that should be read BOD 5 on Monday. She is sick today and the afternoon of Wednesday 01/30/13. I will forward this message and the other test to her today. 01.31/2013

Jake JE Prentiss

Sincerely,


Byron Landfair
City of Artesia
Infrastructure Director
(575) 746-9821
Date 1-1-13


Jake JE Prentiss
City of Artesia
Waste Water Superintendent
(575) 748-0260
Date 2-1-13

Cc:

- Timothy Herfel
- Bruce Yurdin
- Robert George
- Kim Ngo

Mayor
Phillip Burch

Mayor ProTem
Terry Hill

City Councilors
* Bill Rogers * Jeff Youtsey * Jose Aguilar * Kent Bratcher
* Manuel Madrid Jr. * Nora Sanchez * Raul Rodriguez
* Terry Hill

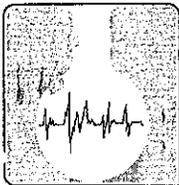
Sampling data from collections by Artesia WWTP staff at the city-designated sampling point outside of Navajo Refining's facilities

Parameter Units Date ↓	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Boron mg/L	Cadmium mg/L	Calcium mg/L	Chromium mg/L	Cobalt mg/L	Copper mg/L	Iron mg/L	Lead mg/L	Magnesium mg/L	Manganese mg/L	Molybdenum mg/L	Nickel mg/L	Potassium mg/L	
10/5/2011			0	0	0.0145	0	0.043	0	161	0	0	0	0	0	39.7	0	0	0	0.9
8/21/2012	0	0	0	0	0.0608	0	0.121	0	582	0	0	0.0423	0	0	176	0	0.008	0	3.3
10/4/2012	0	0	0	0	0.0625	0	0	0	0	0	0	0	0	0	0	0	0.007	0	0
AVG	0	0	0	0	0.0459	0	0.082	0	372	0	0	0.0141	0	0	107.9	0	0.005	0	2.1
MAX	0	0	0	0	0.0625	0	0.121	0	582	0	0	0.0423	0	0	176	0	0.008	0	3.3

Selenium mg/L	Silver mg/L	Sodium mg/L	Vanadium mg/L	Zinc mg/L	BTEX mg/L	Cyanide mg/L	Fluoride mg/L	Phenols mg/L	Sulfate mg/L	Sulfide mg/L	Chloride mg/L	TDS mg/L	TSS mg/L	Ammonia mg/L	Silica mg/L
0.0105	0	17.4	0	0.0052	0	0.746	437	0	27	4.8	0.062	3.74			
0.00834	0	102	0.0088	0.0559	3.04	1480	182	0	48	3160					
0.00953	0	60	0.0044	0.0243	0	2.4	1179	0	86	3160	4.8	0.062	3.74		
0.003457	0	102	0.0088	0.0559	3.41	1620	182	0	182	4.8	0.062	3.74			

*Notes:

Entry of zero denotes ND (non-detect)
 Blank cells denote NA (not analyzed)
 All other results shown in mg/L



ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
 3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
 127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

CITY OF ARTESIA
 attn: MICHAEL STROUD/ JEFF BYRD
 P.O. DRAWER 1310
 ARTESIA NM 88210

REVISED
 2/26/07 02:21

Explanation of codes	
B	Analyte Detected in Method Blank
E	Result is Estimated
H	Analyzed Out of Hold Time
N	Tentatively Identified Compound
S	Subcontracted
1-9	See Footnote

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: CITY OF ARTESIA
 Project:
 Order: 0702567 ARTC1 Receipt: 02-21-07

[Signature]
 William P. Bava, President of Assaigai Analytical Laboratories, Inc.

Sample: EFFLUENT Collected: 02-20-07 10:30:00 By: ST
 Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0702567-0001A		SW846 5030A/8015B	GRO by GC/FID					By: RDW		
V07108	XG.2007.253.16		Gasoline Range Organics	ND	mg/L	1	0.05	1,2	02-22-07	02-23-07
0702567-0001A		EPA 300.0	Anions by IC					By: JJK		
W07139	WC.2007.439.30	16887-00-6	Chloride	220	mg/L	100	0.05		02-21-07	02-23-07
0702567-0001A		SW846 8015B	Diesel Range Organics by GC/FID					By: SDW		
S07098	XG.2007.250.6		Diesel Range Organics	ND	mg/L	1	25		02-22-07	02-22-07

Sample: HALIBURTON Collected: 02-20-07 14:22:00 By: ST
 Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0702567-0002A		SW846 5030A/8015B	GRO by GC/FID					By: RDW		
V07108	XG.2007.253.9		Gasoline Range Organics	0.75	mg/L	1	0.05	1	02-22-07	02-22-07
0702567-0002A		EPA 300.0	Anions by IC					By: JJK		
W07139	WC.2007.439.24	16887-00-6	Chloride	1080	mg/L	100	0.05		02-21-07	02-22-07
0702567-0002A		SW846 8015B	Diesel Range Organics by GC/FID					By: SDW		
S07098	XG.2007.250.9		Diesel Range Organics	29	mg/L	1	25		02-22-07	02-22-07
0702567-0002B		SW846 5030B/8260B	Purgeable VOCs by GC/MS					By: EJB		
V07107	XG.2007.246.8	67-64-1	Acetone	2900	ug/L	50	10		02-22-07	02-22-07
J7	XG.2007.245.10	71-43-2	Benzene	ND	ug/L	5	1		02-22-07	02-22-07
V07107	XG.2007.245.10	100-41-4	Ethylbenzene	18	ug/L	5	1		02-22-07	02-22-07
V07107	XG.2007.245.10	95-47-6	o-Xylene	20	ug/L	5	1		02-22-07	02-22-07

Assaigal Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: CITY OF ARTESIA

Project:

Order: 0702567 ARTC1 Receipt: 02-21-07

Sample: HALIBURTON

Collected: 02-20-07 14:22:00 By: ST

Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date	
0702567-0002B		SW846 5030B/8260B Purgeable VOCs by GC/MS					By: EJB				
V07107	XG.2007.245.10	108-38-3/106-42	p/m-Xylenes	33	ug/L	5	2		02-22-07	02-22-07	
V07107	XG.2007.245.10	108-88-3	Toluene	25	ug/L	5	1		02-22-07	02-22-07	

Sample: NAVAJO METER

Collected: 02-20-07 14:57:00 By: ST

Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date	
0702567-0003A		SW846 5030A/8015B GRO by GC/FID					By: RDW				
V07108	XG.2007.253.11		Gasoline Range Organics	0.85	mg/L	5	0.05	1	02-22-07	02-22-07	
V07138	XG.2007.326.6		Gasoline Range Organics	1.4	mg/L	5	0.05	1 2 H	03-12-07	03-12-07	
0702567-0003A		EPA 300.0 Anions by IC					By: JJK				
W07139	WC.2007.439.25	16887-00-6	Chloride	1240	mg/L	100	0.05		02-21-07	02-22-07	
567-0003A		SW846 8015B Diesel Range Organics by GC/FID					By: SDW				
S07098	XG.2007.250.10		Diesel Range Organics	200	mg/L	1	25		02-22-07	02-22-07	
S07136	XG.2007.331.11		Diesel Range Organics	150	mg/L	1	25	H	03-12-07	03-12-07	

Sample: NAVAJO METER

Collected: 02-21-07 15:29:00 By: ST

Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date	
0702567-0004A		SW846 5030B/8260B Purgeable VOCs by GC/MS					By: EJB				
V07107	XG.2007.246.22	67-64-1	Acetone	180	ug/L	1	10		02-22-07	02-22-07	
V07140	XG.2007.351.8	67-64-1	Acetone	220	ug/L	1	10	E H	03-12-07	03-12-07	
V07107	XG.2007.245.11	71-43-2	Benzene	ND	ug/L	1	1		02-22-07	02-22-07	
V07107	XG.2007.245.11	100-41-4	Ethylbenzene	ND	ug/L	1	1		02-22-07	02-22-07	
V07107	XG.2007.245.11	95-47-6	o-Xylene	ND	ug/L	1	1		02-22-07	02-22-07	
V07107	XG.2007.245.11	108-38-3/106-42	p/m-Xylenes	ND	ug/L	1	2		02-22-07	02-22-07	
V07107	XG.2007.245.11	108-88-3	Toluene	ND	ug/L	1	1		02-22-07	02-22-07	

Sample: AREATION BASIN

Collected: 02-21-07 7:15:00 By: ST

Matrix: G

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date	
0702567-0005A		SW846 5030A/8015B GRO by GC/FID					By: RDW				
16	XG.2007.253.8		Gasoline Range Organics	ND	mg/L	1	0.05	1	02-22-07	02-22-07	

Assalgal Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **CITY OF ARTESIA**

Subject:

Order: **0702567 ARTC1** Receipt: **02-21-07**

Sample: **AREATION BASIN**

Collected: **02-21-07 7:15:00** By: **ST**

Matrix: **G**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0702567-0005A		SW846 8015B	Diesel Range Organics by GC/FID					By: SDW		
S07098	XG.2007.250.11		Diesel Range Organics	ND	mg/L	1	25		02-22-07	02-22-07

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

- 1 This sample was received with a pH >2 and headspace.
- 2 The recoveries of the matrix spike and the matrix spike duplicate, performed on this sample, are outside of QC criteria. This is attributed to matrix interference.

Analytical Results For:

 City of Artesia
 PATSY HERNANDEZ
 P.O. Drawer 1310
 Artesia NM, 88210
 Fax To: None

 Received: 12/17/2012
 Reported: 01/04/2013
 Project Name: NAVAJO EFFLUENT
 Project Number: NOT GIVEN
 Project Location: NAVAJO EFFLUENT

 Sampling Date: 12/14/2012
 Sampling Type: Wastewater
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: NAVAJO EFFLUENT (H203023-01)

BTEX 8021B		mg/L		Analyzed By: AP				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.001	0.001	12/21/2012	ND	0.042	84.6	0.0500	12.7		
Toluene*	0.002	0.001	12/21/2012	ND	0.047	93.8	0.0500	12.4		
Ethylbenzene*	0.004	0.001	12/21/2012	ND	0.046	91.4	0.0500	11.7		
Total Xylenes*	0.008	0.003	12/21/2012	ND	0.143	95.2	0.150	11.5		
Total BTEX	0.015	0.006	12/21/2012	ND						

Surrogate: 4-Bromofluorobenzene (PII) 193 % 89.5-126

Oil and Grease 413.1		mg/L		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Oil and Grease	68.4	5.00	12/28/2012	ND	212	106	200			

TPH 8015M		mg/L		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	1.17	1.00	12/18/2012	ND	44.8	89.5	50.0	1.17		
DRO >C10-C28	165	1.00	12/18/2012	ND	50.5	101	50.0	0.671		
EXT DRO >C28-C35	13.2	1.00	12/18/2012	ND	ND		0.00			

Surrogate: 1-Chlorooctane 111 % 48.7-164

Surrogate: 1-Chlorooctadecane 152 % 54.8-165

Cardinal Laboratories

* = Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

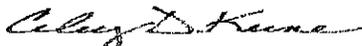
Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

January 04, 2013

PATSY HERNANDEZ

City of Artesia

P.O. Drawer 1310

Artesia, NM 88210

RE: NAVAJO EFFLUENT

Enclosed are the results of analyses for samples received by the laboratory on 12/17/12 12:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



HOLLYFRONTIER :
THE HOLLYFRONTIER COMPANIES

November 16, 2012

Honorable Phil Burch
Mayor, City of Artesia
PO Box 1310
Artesia, NM 88211-1310

RE: Spring 2012 Report – Artesia - Navajo Refining Co. LLC Effluent Pre-Treatment Standards (40-CFR-419.17)

Dear Mayor Burch:

Due to change in personal, this report was over looked to send the results to your office in a timely manner.

Enclosed are the results from our Spring 2012 sampling of the effluent stream from Navajo's Wastewater Plant to the City of Artesia's Publicly Owned Treatment Works (POTW). The sampling is required by the federal pre-treatment regulations (40-CFR-419.17).

The following table shows the results of oil and grease, ammonia (as N) and total chromium. The Applicable standards (limits) are 100 mg/l for oil and grease, ammonia, and 1 mg/l for chromium. We are well under the limits. The attached analyses were done by ALS Laboratory Group of Houston, Texas.

Oil & Grease	2.44 mg/l
Ammonia (as N)	5.96 mg/l
Chromium, Total	ND

If you have any questions, please contact me at mike.holder@hollyfrontier, or by phone 575-746-5487

Regards,

Mike Holder,
Environmental Manger for Navajo Refinery Co. LLC

Attachment: ALS Analysis

Cc: Lee Bohme USEPA

Env. File: Effluent Pre-Treatment Standards REF.ART.12 4E04

ALS Environmental

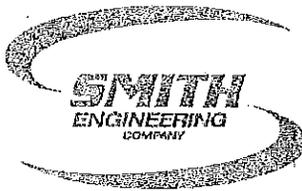
Date: 29-Jun-12

Client: Navajo Refining Company
 Project: POTW Semiannual
 Sample ID: POTW
 Collection Date: 6/19/2012 08:40 AM

Work Order: 1206796
 Lab ID: 1206796-01
 Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			SW6020		Prep Date: 6/25/2012	Analyst: SKS
Chromium	ND		0.00500	mg/L	1	6/26/2012 01:44 PM
AMMONIA AS N			SM4500 NH3-B-F			Analyst: EDG
Nitrogen, Ammonia (as N)	5.96		0.500	mg/L	20	6/27/2012 11:00 AM
OIL AND GREASE			E1664			Analyst: KKP
Oil and Grease	2.44		2.00	mg/L	1	6/27/2012 02:00 PM

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



12/12/11

December 7, 2011

NMED Ground Water Quality Bureau
Pollution Prevention Section
-NOTICE OF INTENT -
P.O. Box 5469
Santa Fe, New Mexico, 87502-5469

Re: Notice of Intent for Artesia New Mexico, DP-258

Attached herewith is a Notice of Intend (NOI) for Artesia New Mexico's Discharge Permit to add Navajo Industry's cooling tower and slip stream waste water to the influent of Artesia's wastewater plant. Included is the:

- NOI
- Navajo Refinery water analysis of their cooling tower and slip stream flows (Summary spread sheet)
- Artesia WWTP Design Criteria
- Historical ground water discharge testing

I have been tasked by the City of Artesia to establish the permitting, costs and operation modifications for this project. I am prepared to discuss this project in behave of Artesia, but if you have additional questions you may contact Byron Landfair, Infrastructure Director, City of Artesia at 575-746-0069.

Sincerely,

Roy Robinson, PE
Senior Engineer
Smith Engineering Company
Direct line 505-314-5581

XXX/r

Enclosure

cc: Byron Landfair, Infrastructure Director, City of Artesia
Naomi Davidson, Geoscientist, NMED GWB/PPS
Robert George, Domestic Team Leader, NMED GWB/PPS



1. Name and mailing address of person proposing to discharge:

Roy Robinson, PE Work Phone: 505-314-5581
Senior Engineer, Smith Engineering CO Cell/Home Phone: 505-459-7947
2201 San Pedro NE, Bldg 4, Suite 200 Fax: 505-804-2376
Artesia, New Mexico, 80210 Email: royr@smithengineering.pro

2. Name of facility:

Artesia Waste Water Treatment Plant

3. Physical location of discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):

1702 North Haldeman Road
Artesia, New Mexico 80210-9423
DP-258, NPDES NM0022268

4. Type of operation generating the discharge (e.g., truck wash, food processing plant, restaurant, etc.):

Oil Refinery - Artesia to accept Cooling Tower Blow Down effluent from Navajo Refining Company at a rate not to exceed 216,000 gallons per day and 21,600 gallons per day of Slip Stream effluent

5. Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:

Cooling Tower blow down water - this water is bought from the City of Artesia public water supply and is used to cool equipment and processes through a single containment system.

Slip Stream effluent - this is process water that has been treated through a API and aggressive biological treatment system to meet discharge requirements of a Class I injection well (see attached lab summary results).

6. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:

Cooling Tower Blow Down effluent: The test results show fluoride at 2.49 ppm, chloride at 428 ppm, Mn at 0.222 ppm and TDS at 2560 ppm.

Slip Stream effluent: The tests show selenium at 0.456 ppm, chloride at 404 ppm, sulfate at 2290 ppm, and TDS at 4320 ppm.

7. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., grease interceptor, lagoon, septic tank/leachfield, etc.) Include sizes, site layout map, plans and specifications, etc. if available:

Artesia WWTP is an 2.8 MGD activated sludge plant with bar screen and grit removal pretreatment. There are 4 - 0.65 MG aeration basins for primary treatment. There are 2 secondary clarifiers with UV disinfection. The effluent generally is discharge for land application in the summer and to the Pecos River in the winter. (see attached Design Criteria)

8. Estimated maximum daily discharge volume in gallons per day (or other units):

The current Artesia Influent is approximately 1.2 to 1.4 MGD. The requested additional Influent from the NOI would add .237 MGD.

9. Estimated depth to ground water (ft): id

Estimated depth is 9 to 11 feet at MW #1 and #2 (see Groundwater Testing - attached)

Signature: [Signature] Date: 12-12-11

Printed name: Roy Robinson 505-314-5581 Title: Senior Engineer

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965

Attachment H

WASTEWATER SERVICE AGREEMENT BETWEEN THE CITY OF ARTESIA AND NAVAJO REFINING COMPANY, L.L.C.

This agreement is entered into this ___ day of _____, 2012 by and between NAVAJO REFINING COMPANY, L.L.C. a Delaware Corporation, (or is it Holly?, add mailing address) having a principal place of business in Artesia, New Mexico ("Navajo"), and the City of Artesia, New Mexico, a Municipal Corporation (the "City"), whose mailing address is P.O. Box 1310, Artesia, NM 88210.

Whereas, Navajo desires to discharge wastewater into the City's sanitary sewer system from Navajo's Facility located at _____ address _____ (the "Facility").

Now, therefore, in consideration of the promises and obligation set forth below the City and Navajo agree as follows:

A. ACCEPTANCE OF WASTEWATER

The City agrees to accept wastewater from Navajo for treatment into its sanitary sewer system, provided said wastewater meets all the City's requires specifications, all Ordinances and applicable State and Federal regulations ,and Attachment 1 to this agreement which is made a part and parcel hereof.. There are three wastewater discharges from Navajo to the City which are labeled as Domestic, Cooling Tower and Slip Stream. This agreement is for the discharge of the Cooling Tower and Slip Stream wastewater only. The Domestic wastewater flow will continue to be received and billed under the City's current sewer rate schedule, provided that the Domestic wastewater complies with all Ordinances (Ord. 7-1-2: Utility Rates) and applicable State and Federal Regulations. By accepting this agreement, the previous agreement governing the acceptance of Navajo's Slip Stream flows of July 14, 1999 is hereby replaced and superseded by this agreement.

Definitions:

Domestic – the domestic wastewater flow into the City's sanitary sewer system which is from office and administrative buildings of Navajo and enters the sanitary sewer system at ___(address/location)___.

Cooling Tower - the cooling tower wastewater is from the two cooling towers located on Navajo's site which are labeled and known as Y11 and Y12. This wastewater shall be produced and collected from the cooling towers only and shall be from no other source. It shall be reclaimed and treated, as required, by Navajo prior to delivery to the City.

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This is the Draft with all of the changes Accepted.

Slip Stream – the slip stream wastewater is the treated process water from the Navajo site that would qualify and be appropriate for discharged to a Class I injection well under the OCD regulations. It shall be reclaimed and treated, as required, by Navajo prior to delivery to the City.

B. CONNECTION AND DELIVERY

Navajo shall bear the exclusive responsibility and expense to analyze, design and construct at all facilities necessary for delivery of Navajo's wastewater into the City sanitary sewer system to be completed within 60 days of the signature of this agreement.

This shall include, but not limited to:

(1) A verified sewer map of Navajo's on-site sanitary sewer connections to the City. The intent of this on-site sewer map is to identify any wastewater sources that are not in this agreement and "air gap" their connection as a source to the City's sanitary sewer system. The on-site cross connection sanitary sewer survey shall be verified by a Registered Professional Engineer licensed within the State of New Mexico that no discharges, except as permitted by this Agreement from Navajo's Domestic, Cooling Tower and Slip Stream are possible to enter the City's sanitary collection system individually. The survey may include a CCTV of Navajo's on-site collection system from source to City, if required to verify cross connection.

(2) Navajo shall construct and install three (3), suitable and approved, metering and sampling station/manholes, which are required to be approved in advance by the City, at the discharge of the domestic, cooling tower and slip stream flows which shall be located on the City right of way in such a location that has unimpeded 24/7 access and is secured to public access. The location of the three (3) sampling and metering manholes will be such that each will collect their specific flows and each will discharge to a common manhole with an isolation valve in between. The sampling and metering manholes shall be designed to accept the sampler and meter as defined by the City. The meter shall be capable of recording and displaying hourly data in gallons per minute, a totalizer in thousand gallons, battery backup, data download port and have a data storage capacity of 365 days. A continuous hydrocarbon tester with remote alarm capability and continuous recording will be installed on the combined effluent of the slip stream and cooling tower effluent of model TD-4100XD manufactured by Turner Designs or equal. The electricity of required voltage for the equipment in the manholes shall be furnished by Navajo at no cost or expense to the City for daily operation.

C. MONITERING AND REPORTING

(1) Navajo shall promptly reimburse the City for all costs and expenses associated with the operation, sample collection and maintenance, measurement and reporting which payment shall be in excess of all charges identified in Section E. CHARGES.

(2) Navajo will immediately notify the City at all times of any anticipated changes in wastewater flow or wastewater quality.

(a) In the case of any discharge, including, but not limited to, accidental discharges, discharges of any non-routine nature, a non-customary batch discharge, or a slug load that may cause potential problems for the [Spell this acronym out first] "POTW", Navajo shall immediately telephone and notify the Wastewater Superintendent during business hours. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and the corrective actions taken by Navajo.

(b) Within five days following such occurrence, the Navajo shall provide the Wastewater Superintendent with a detailed written report describing the cause of the dangerous discharge and measures taken by Navajo to prevent similar future occurrences. Such notification shall not relieve Navajo of any expense, loss, damage or other liability which may be incurred as a result of the damage to person or property; nor shall such notification relieve Navajo of any fines, civil penalties, or other liability which may be imposed by this agreement or by other applicable law.

D. WASTEWATER DISCHARGE

The wastewater discharge from the Facility measured at the two (2) points of connection, Slip Stream and Cooling Tower, shall not exceed the following limits based on a twenty four (24) hour average:

(1) Flow

Slip Stream of 21,600 gallons per day

Cooling Towers of 216,000 gallons per day

(2) Quality Will be governed by both the current and future Artesia Pretreatment Ordinance and Industrial Wastewater Ordinances, and as may be amended (1996 Code 13.16.010)

E. CHARGES

(1) Plant Investment Fee

(a) Navajo shall pay to City in cash a \$2,180,482 plant investment fee ("PIF") upon acceptance of this agreement.

(b) The \$2,180,482 PIF is based on the criteria set forth in Section D above. If the actual average wastewater loadings for any month (based on a 30-day average) exceeds the limits specified in Section D above by more than 5%, additional PIF's shall be paid to the City by Navajo. Such charges shall be calculated according to the connection charge methodology which may be required by the City at that time and which shall be determined at the sole judgment and discretion of the City. Additionally, the City reserves the right to decline to accept any such excess loadings, in which case it shall so notify Navajo and Navajo will have 30 days to reduce any excess loading to the limits established and referenced in Section D.

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(2) Base Rate

(a) Navajo shall pay (need to get collection maintenance, testing (man hours and testing costs)) built in here) per month.

(3) Commodity Rate

(a) Navajo shall pay \$1.84 per thousand gallons based on the combination of the Slip Stream and the Cooling Tower metered wastewater. The commodity charge shall increase annually by the Ordinance Rate increase as noted in City Rate Ordinance, and as may be amended.

(4) Other Charges

(a) The excess strength user charges for the various loading Parameters shall be paid according to standard City procedures and charges schedules in effect at the time of use, as set forth in Artesia City Code, as may be amended.

F. GENERAL PROVISIONS

(1) Industrial Discharge Permit

Navajo shall be required to obtain an Industrial Discharge Permit from the City (pretreatment permit) in accordance with all present and future City Ordinances.

(2) Penalties

If the City violates its National Pollution Discharge Elimination System (NPDES) or New Mexico Ground Water (NMGW) permits for wastewater discharge, and is subsequently fined for any such violations or in the event any Navajo discharges results in such violations, then Navajo shall pay or promptly reimburse the City for the full amount of any fine or penalty, and any other fees, costs, or expenses, imposed. These monies shall be separate from and additional to any civil liability to the City arising from breach of this Agreement.. In the event of breach, Navajo shall additionally be obligated to pay for all the City's reasonable Attorneys fees, costs, and expenses incurred. Additionally, the City shall have a lien against the real and personal property of Navajo for all unpaid wastewater charges or fees owed to the City as authorized by 7-3A-9 of the Artesia City Code.

(3) Termination

(a) At any time after giving at least 30 days prior written notice to the other, either party may terminate this Agreement. Upon termination neither party shall have any further right or obligation to the other under this agreement, save and except those rights and obligations which have accrued or which were not performed by a party prior to the date of termination.

(b) Either party may additionally terminate this agreement upon material breach by the other of any of the terms or conditions of this agreement, if such breach continues unabated for 60 days following written Notice of the Breach. However, this agreement shall not be terminated under this

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Subparagraph if the defaulting party remedies such breach within the 60 day period immediately following the date of mailing of written notice of the existence of such breach. Termination shall not, however, be the sole remedy of either party and the exercise of the right to terminate provided in this paragraph shall not preclude the pursuit of any other right or remedy available to a party, at equity or the law.

(c) Reopener Clause

(i) This agreement may be reopened and modified to incorporate any new or revised requirements as required in subsequent NPDES or NMED/GWQB permits, or as a result of being required to institute the National Categorical Pretreatment Standards.

(ii) This agreement may additionally be reopened and modified to incorporate any new or revised Federal, State, or Local pretreatment standards or requirements.

(4) Time of Payments

Whenever under the terms of this agreement, payment is to be made by Navajo to the City, Navajo shall make all such payments within fifteen days after such time the payment is due, or of not yet due, within fifteen days after invoice or demand for payment has need made by the City. If Navajo's payment becomes delinquent, delinquency charges at the rate of one and one-half percent per month of the unpaid balance shall additionally be due and payable to the City.

(5) Assignment

This agreement, and/or any of Navajo's rights hereunder, may be assigned by Navajo in whole or in part, providing that the assignee separately agrees in writing prior or contemporaneously to the Assignment to be separately bound by all of the applicable terms and conditions of this agreement, otherwise said Assignment shall be void and of no effect. Any such Assignment shall further not relieve Navajo of the performance of all terms and provisions of this Agreement. This agreement shall be binding upon and shall insure to the benefit of the respective successors and assigns of the parties hereto.

(6) Notices

Whenever notice is required or permitted under this agreement, the same shall be in writing and shall be given effect by either hand delivery, or by mailing to the party by U.S. Certified Mail, Return receipt Requested addressed to the party. Notices to the City and Navajo shall be addressed as shown in the first paragraph of this Agreement:

For the City:

PO Box _____

RECEIVED FROM BYRON ON 3/21/2012
This is the Draft with all of the changes Accepted.

For Navajo:

(SIGNATURES OF PARTIES AND NOTARY ACKNOWLEDGEMENTS)

RECEIVED FROM BYRON ON 3/21/2012

This is the Draft with all of the changes Accepted.

Attachment 1

The following is Agreed to be a part and parcel of that certain Wastewater Service Agreement between CITY OF ARTESIA, NEW MEXICO and NAVAJO REFINING COMPANY, L.L.C. dated the _____, day of _____, 2012.

Note: As used below "User" or "Users" shall mean Navajo Refining Company, L.L.C. or any other person, firm, or entity which introduces wastewater into the sewer system of the City by permission or consent of Navajo.

GENERAL SEWER USE REQUIREMENTS

2.1 Prohibited Discharge Standards

A. General Prohibitions. No User shall introduce or cause to be introduced into the POTW any pollutant or wastewater resulting in Pass Through or Interference. These general prohibitions apply to all Users of the POTW whether or not they are subject to categorical Pretreatment Standards or any other National, State, or local Pretreatment Standards or Requirements.

B. Specific Prohibitions. No User shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater:

(1) Pollutants which create a fire or explosive hazard in the POTW, including, but not limited to, waste streams with a closed-cup flashpoint of less than 140 degrees F (60 degrees C) using the test methods specified in 40 CFR 261.21;

(2) Wastewater having a pH less than 6.6 or more than 9.0, or otherwise causing corrosive structural damage to the POTW or equipment;

(3) Cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar asphalt residues, residues from refining or processing of fuel or lubricating oil, mud or glass

grinding or polishing wastes or any other solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference;

(4) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, will cause Interference with the POTW;

(5) Wastewater having a temperature greater than 86 degrees F (30 degrees C)], or which will inhibit biological activity in the treatment plant resulting in Interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104 degrees F (40 degrees C);

(6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin, in amounts that will cause Interference or Pass Through;

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

(8) Trucked or hauled pollutants, except at discharge points designated by the City in accordance with Section 3.4 of this ordinance;

(9) Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or a hazard to life, or to prevent entry into the sewers for maintenance or repair;

(10) Wastewater imparting color which cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent, thereby violating the COA's NPDES permit. Color (in combination with turbidity) shall not cause the treatment plant effluent to reduce the depth of the compensation point for photosynthetic activity by more than ten (10) percent from the seasonably established norm for aquatic life.

(11) Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or Federal regulations;

(12) Storm Water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, de-ionized water, Noncontact Cooling Water, and unpolluted wastewater, unless specifically authorized by the City;

(13) Sludges, screenings, or other residues from the pretreatment of industrial wastes;

(14) Medical Wastes, except as specifically authorized by the City
in an individual wastewater discharge permit or a general permit;

(15) Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail toxicity test;

(16) Detergents, surface-active agents, or other substances which might cause excessive foaming in the POTW;

(17) Fats, oils, or greases of animal or vegetable origin in concentrations greater than 50 mg/l;

(18) Any hazardous wastes as defined in 40 CFR Part 261;

(19) Persistent pesticides and/or pesticides regulated by FIFRA;

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This is the Draft with all of the changes Accepted.

(20) Any substance which will cause the POTW to violate its NPDES and/or other disposal system permits.

(21) Any wastewater, which in the opinion of the Infrastructure Director (ID) can cause harm either to the sewers, sewage treatment process, or equipment; have an adverse effect on the receiving stream; or can otherwise endanger life, limb, public property, or constitute a nuisance, unless allowed under special agreement by the City.

(22) The contents of any tank or other vessel owned or used by any person in the business of pumping sewage, effluent, septic tank waste or other wastewater unless said person has first obtained testing and approval as may be generally required by the City and paid all fees assessed for the privilege of said discharge.

(23) Persistent pesticides and/or pesticides regulated by the Federal Insecticide Fungicide Rodenticide Act (FIFRA).

C. Pollutants, substances, or wastewater prohibited by this Section shall not be processed or stored in such a manner that they could be discharged to the POTW.



EPA Standard

D. Users subject to categoryal Pretreatment Standards found at 40 CFR Chapter I, Subchapter N, Parts 405-471 must comply accordingly along with any applicable local limits. The categoryal pretreatment standards as amended and promulgated by EPA pursuant to the Act and as found at 40 CFR Chapter I, Subchapter N, Parts 405-471, are hereby incorporated and shall be enforceable under this ordinance.

E. The POTW reserves the right to establish by ordinance or resolution or in wastewater discharge permits, stricter limitations or requirements on discharges to the POTW when deemed reasonably necessary to comply with the objectives presented in this Ordinance, or the general and specific prohibitions within this part, or with any other reasonable objectives of the City.

F. Dilution is prohibited as a substitute for treatment unless expressly authorized to do so by an applicable pretreatment standard or requirement; no industrial user shall ever increase the use of process water, or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with a pretreatment standard or requirement. The City may impose mass limitations on industrial users which are using dilution to meet applicable pretreatment standards or requirements or in other cases where the imposition of mass limitations is appropriate.

2.2 Local Limits

- A. The COA is authorized to establish Local Limits pursuant to 40 CFR 403.5(c.)
- B. The following pollutant limits are established to protect against Pass Through and Interference. No person shall discharge wastewater containing in excess of the following Daily Maximum Limit.

[900]	mg/l aluminum
[25]	mg/l ammonia
[0.05]	mg/l arsenic
[5.0]	mg/l barium
0.05	mg/l benzene
[1.0]	mg/l boron
[0.5]	mg/l BTEX
[250]	mg/l BOD ₅
[0.02]	mg/l cadmium
[100]	mg/l chlorides (nte)
[4.1]	mg/l chromium
[1.0]	mg/l copper
[0.49]	mg/l cyanide
[10.0]	mg/l fluoride
[100]	mg/l formaldehyde

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[0.1]	mg/l lead
[1.0]	mg/l manganese
[0.005]	mg/l mercury
[2.0]	mg/l molybdenum
[50]	mg/l nitrogen (total)
[1.0]	mg/l nickel
[2.0]	mg/l phenolic compounds
[5.0]	mg/l phosphorous
[0.02]	mg/l selenium
[0.1]	mg/l silver
[250]	mg/l total suspended solids
[3.2]	mg/l total toxic organic
[100.0]	mg/l TPH (Total Petroleum Hydrocarbon -EPA Method 413.1)
[5.0]	mg/l zinc
[0.05]	mg/l *TICH

*The sum of the concentration of all quantifiable values equal to or greater than the detection limit for all chlorinated hydrocarbons indentified by EPA Method 624.

The above limits apply at the point where the wastewater is discharged to the POTW. All concentrations for metallic substances are for total metal unless indicated otherwise. The COA may impose mass limitations in addition to the concentration-based limitations above.

(SIGNATURES OF PARTIES AND NOTARY ACKNOWLEDGEMENTS OF THIS ATTACMENT

RECEIVED FROM BYRON ON 3/21/2012
This is the Draft with all of the changes Accepted.

Attachment I



REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159
ARTESIA, NEW MEXICO 88211-0159

TELEPHONE
(505) 748-3311

388.7

EASYLINK
62905278

FAX

(505) 748-6410 ACCTG
(505) 748-8165 EXEC
(505) 748-9077 ENGR
(505) 746-4438 P / L

March 10, 1995

Mr. Lee S. Bohme
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202-2733

Certified Mail
Return Receipt

Re: Navajo Refining Co. - Registration of Pretreated Discharge to POTW
Baseline Monitoring Report

Dear Mr. Bohme:

Enclosed please find the Industrial Baseline Monitoring Report covering the discharge of pretreated wastewater from Navajo Refining Company to the City of Artesia POTW.

If you have any questions, please call me at (505) 748-3311.

Sincerely,

David G. Griffin
Manager of Environmental
Affairs for Water & Waste

DGG/sj

INDUSTRIAL BASELINE MONITORING REPORT

Instructions: Please complete this form in as much detail as possible. Include additional information on attached sheets as necessary. Refer to the supplemental instructions and return this report to the address shown in the instructions.

(1) Identifying Information:

A. Legal Name: Navajo Refining Company
 Mailing Address: P.O. Drawer 159
Artesia, New Mexico
 Zip: 88210

B. Facility Name: Navajo Refinery
 Location: 501 E. Main St.
Artesia, New Mexico
 Zip: 88210

C. Name of Owners: Navajo Refining Company

D. Name of Operators: Navajo Refining Company

E. Facility Contact (provide the name, title & phone number of a designated person to contact if additional information is necessary.) David G. Griffin, of Environmental
Affairs (505) 748-3311

F. Number of Employees 396 G. Number of Shifts 3

H. Number of Months/Year in Operation 12

I. Provide the name of the publicly owned treatment works (sewerage authority, municipality, etc.) that receives the wastewater discharges from this facility (if this facility is not connected to a sewerage system describe where wastewater is discharged.) City of Artesia, New Mexico

J. Provide the date the facility began/will begin discharging to the publicly owned treatment works (sewerage authority, municipality, etc.) February 15, 1994
 Date facility began operation 1920's

(2) Permits:

Describe all environmental control permits held by or for the facility

Describe Title of the Permit	Permit No.	Issuing Office	Exp. Date
N.M. Discharge Permit	GW-28	NMOCD	1999
Air Permit	195-M-5-Rev.	NMED	N/A
Stormwater Discharge Permit	General Permit	EPA	N/A
RCRA T5D Permit	NMD048918817	NMED/EPA	See Note

NOTE: RCRA permitted Landfarm became inactive with the Landban. The facility currently is an RFI study phase leading to closure.

(3) Description of Operations:

A. List Raw Materials Used: Crude Oil, Natural Gas for fuel fresh water, and isobutane

B. List Chemicals Used: See attached Table, Material Safety Data Sheets and Tier Two Report.

C. Describe Manufacturing or Service Activities Conducted and the Final Products: Petroleum Refining including topping, cracking, alkylation, desulfurization, and reforming. Final products include LPG (Propane), Gasolines, Diesel Fuel, Jet Fuel, Carbon Black Oil and Asphalt

D. Summarize each Regulated Process: Petroleum Refining - Topping and Cracking

Process Description	Production Rate	Pretreatment Standard		SIC Code
		Category	Subpart	
<u>Petroleum Refining-Topping</u>		<u>40 CFR 419.17</u>	<u>A</u>	<u>2911</u>
<u>Cracking</u>		<u>40 CFR 419.27</u>	<u>B</u>	<u>2911</u>

E. Provide on a separate sheet:

1) a schematic drawing of flow chart of each regulated process that generates wastewater.

2) a schematic drawing showing all wastewater flows (regulated and unregulated), location of any treatment system, and sampling locations and estimated flows for each individual wastestream.

3) a schematic process diagram which indicates points of discharge to the POTW from regulated processes.

(4). Flow Measurement:

A. Total Plant Flow in Gallons Per Day (gpd):

Average 300,000 Maximum 1,000,000

B. Individual Process Flows in Gallons Per Day (gpd)

Regulated Process	Average Flow Rate (gpd)	Maximum Flow Rate (gpd)	Type of Discharge (Batch, etc)
Pet. Refining - Topping	85,000	150,000	Continuous
Cracking	5,000	100,000	Continuous

Unregulated Process	Average Flow Rate (gpd)	Maximum Flow Rate (gpd)	Type of Discharge (Batch, etc.)
All Other Processes	90,000	200,000	Continuous
Groundwater Remediation	100,000	100,000	Continuous
Cooling Water	20,000	450,000	Continuous
Sanitary Wastewater	3,000	5,000	Primarily During Normal Business Hours.

(5) Measurement of Pollutants

A. Provide on a Separate Sheet:

- 1) The user shall identify the Pretreatment Standards applicable to each regulated process.
- 2) A description of any and all wastewater treatment utilized (show treatment system location in relation to process flows and sampling points on schematic drawing required by Question 3.E.).

B. Analysis of Regulated Flows:

The industrial user must perform sampling and analysis of the effluent from all regulated processes (after treatment, if applicable). Provide the analytical data for the regulated processes in the space provided below. Attach additional sheets if necessary. (Only those pollutants specifically regulated by the applicable category need be reported.)

Regulated Process: Subpart B - Cracking Subcategory 419.27 Pretreatment

Pollutant (mg/l)	Oil & Grease	Ammonia	Total Chromium						
Maximum	100	100	0.45						
Average			0.067						

Sample Location: Adjacent to the suction of the pump that transfers the pretreated effluent to the POTW. See attached flow diagram.

Sample Type (composite samples are required except where not feasible or where grab samples are specifically required (see 40 CFR 403.12(b)(5)(iii))): Grab samples per 403.12 (b)(5)(iii). See attached explanation.

Number of Samples and Frequency Collected: 2 grab samples total - collected one every 6 months for reporting in June and December.

Analytical Methods Used: Ammonia (asN) mg/l, EPA Method 350.1, 350.2 or 350.3; Chromium - total mg/l - EPA Method 218.1 or 218.2; Oil & Grease - EPA Method 413.1

C. Analysis of Total Plant Flow (if appropriate)

An industrial user may sample and analyze the total plant flow and calculate an equivalent concentration limit using the combined wastestream formula if regulated process flows are mixed with other flows prior to treatment and/or sampling. Record the analytical results for all regulated pollutants below. Record the calculated concentration limits as well as the actual measured concentrations.

Pollutant (mg/l)	SEE	ATTACHED	ANALYTICAL	REPORTS					
MEC*									
AEC*									
AMMC*									
AAAC*									

Sample Location: _____

Sample Type (composite samples are required except where not feasible or where grab samples are specifically required (see 40 CFR 403.12(b)(5)(iii))): _____

Number of Samples and Frequency Collected: _____

Analytical Methods Used: _____

*MEC - Maximum Equivalent Concentration (derived through the combined wastestream formula)

*AEC - Average Equivalent Concentration (derived through the combined wastestream formula)

*AMMC - Actual Measured Maximum Concentration

*AAAC - Actual Measured Average Concentration

5.a.1. The pretreatment standards applicable to this discharge are found in 40 CFR 419.27. as follows:

40 CFR 419 EPA EFFLUENT GUIDELINES AND STANDARDS FOR PETROLEUM AND PETROLEUM REFINING

419.27 Pretreatment Standards for New Sources (PSNS)

419.27.a. The following standards apply to the total refinery flow contribution to the POTW

Oil and grease 100 mg/l
Ammonia 100 mg/l

419.27.b. The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying (1) The standard; (2) by the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow standard is Total Chromium 1 mg/l

Calculation:

Average (1 mg/l) (18,900 l/D) $\frac{(20,000 \text{ gpd})}{(30,000 \text{ gpd})}$ = 1260 mg/D

$\frac{1260 \text{ mg}}{18,900 \text{ l}}$ = 0.067 mg/l

Maximum (1 mg/l) (76,200 l/D) $\frac{(450,000 \text{ gpd})}{(1,000,000 \text{ gpd})}$ = 34,290 mg/D

= 0.45 mg/l

General discharge prohibitions are found in 40 CFR 403.5 which also apply to this source. These general prohibitions include no discharge of pollutants which would cause:

1. Pass through or interference with the POTW including excessive BOD or oil
2. Fire or Explosive Hazard
3. Corrosive Damage or pH < 5
4. Obstructions due to excessive Solids or Viscosity
5. Excessive Heat
6. Toxic gases, vapors or fumes

5.a.2. Description of Wastewater Treatment

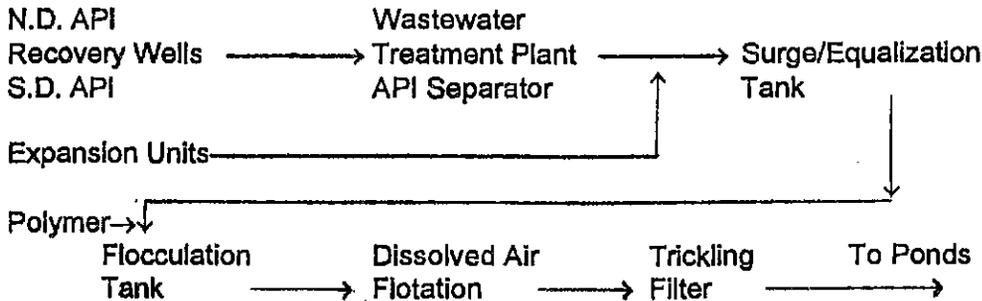
Navajo Refinery's wastewater treatment system consists of four (4) major gathering systems. Each one of the gathering systems consists of sewers coming from process units located in different parts of the refining complex as shown below.

I. GATHERING SYSTEM

- | | | | | | |
|----|--|---|---|---|--|
| 1. | <u>North Division
Process Units</u> | → | <u>North Division
API Separator</u> | → | <u>Refinery
Wastewater
Treatment
Plant</u> |
| | <ul style="list-style-type: none">1. Boiler Feedwater Unit2. Sulfur Recovery Units3. Amine Units4. Kerosene Hydrodesulfurization Unit5. Naphtha Hydrodesulfurization Unit6. Sour Water Stripper Unit7. Isomerization Unit8. Fluid Catalytic Cracking (FCC) Unit | | | | |
| 2. | <u>Expansion Units</u> | → | <u>Alkylation Unit
API Separator</u> | → | <u>Refinery
Wastewater
Treatment
Plant</u> |
| | <ul style="list-style-type: none">1. Continuous Catalytic Regeneration Reformer (CCR) Unit2. Alkylation Unit3. Diesel Hydrodesulfurization Unit | | | | |
| 3. | <u>South Division
Process Units</u> | → | <u>South Division
API Separator</u> | → | <u>Refinery
Wastewater
Treatment
Plant</u> |
| | <ul style="list-style-type: none">1. Crude Topping Unit2. Vacuum Distillation Unit3. Boiler Feedwater Unit4. Merox Treating Units5. Gasoline Blending Unit | | | | |
| 4. | <u>Recovery Well Network</u> | → | Possible
Future Treatment
and ReInjection to
Aquifer | → | <u>Refinery
Wastewater
Treatment
Plant</u> |
| | <ul style="list-style-type: none">1. Navajo has 14 hydrocarbon recovery wells in and around the refinery that also produce contaminated groundwater. | | | | |

All the gathering systems deliver their effluent to the Refinery Wastewater Treatment Plant. The Treatment Plant is illustrated below:

II. REFINERY WASTEWATER TREATMENT PLANT



Once the effluent has passed through the Wastewater Treatment Plant, it is piped to the Evaporation Pond system. The Evaporation Pond system consists of three (3) active impoundments covering a combined area of 73.7 acres. The ponds are designed to be large in surface area and relatively shallow (≤ 6 ft.) to maximize evaporation in this desert climate.

Due to concerns about possible impact of the Hazardous Waste regulations (RCRA) on the Refinery's entire wastewater gathering and treatment system, Navajo has elected to discharge some wastewater from the Evaporation Pond system to the City of Artesia POTW. The reason for doing this is found in 40 CFR 264.1 (g)(6) as follows:

- | | |
|---------------|--|
| 40 CFR 264 | Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| 264.1 | Purpose, scope and applicability |
| 264.1 (g) | The requirements of this part do not apply to: |
| 264.1 (g)(6) | The owner or operator of ... a wastewater treatment unit as defined in § 260.10... |
| 40 CFR 260.10 | Defines a wastewater treatment unit as a device which: |
| (1) | Is part of a wastewater treatment facility that is subject to regulation under either section 402 or 307(b) of the Clean Water Act and |
| (2) | Receives and treats or stores an influent wastewater that is a hazardous waste...and |
| (3) | Meets the definition of tank or tank system in § 260.10 of this chapter |

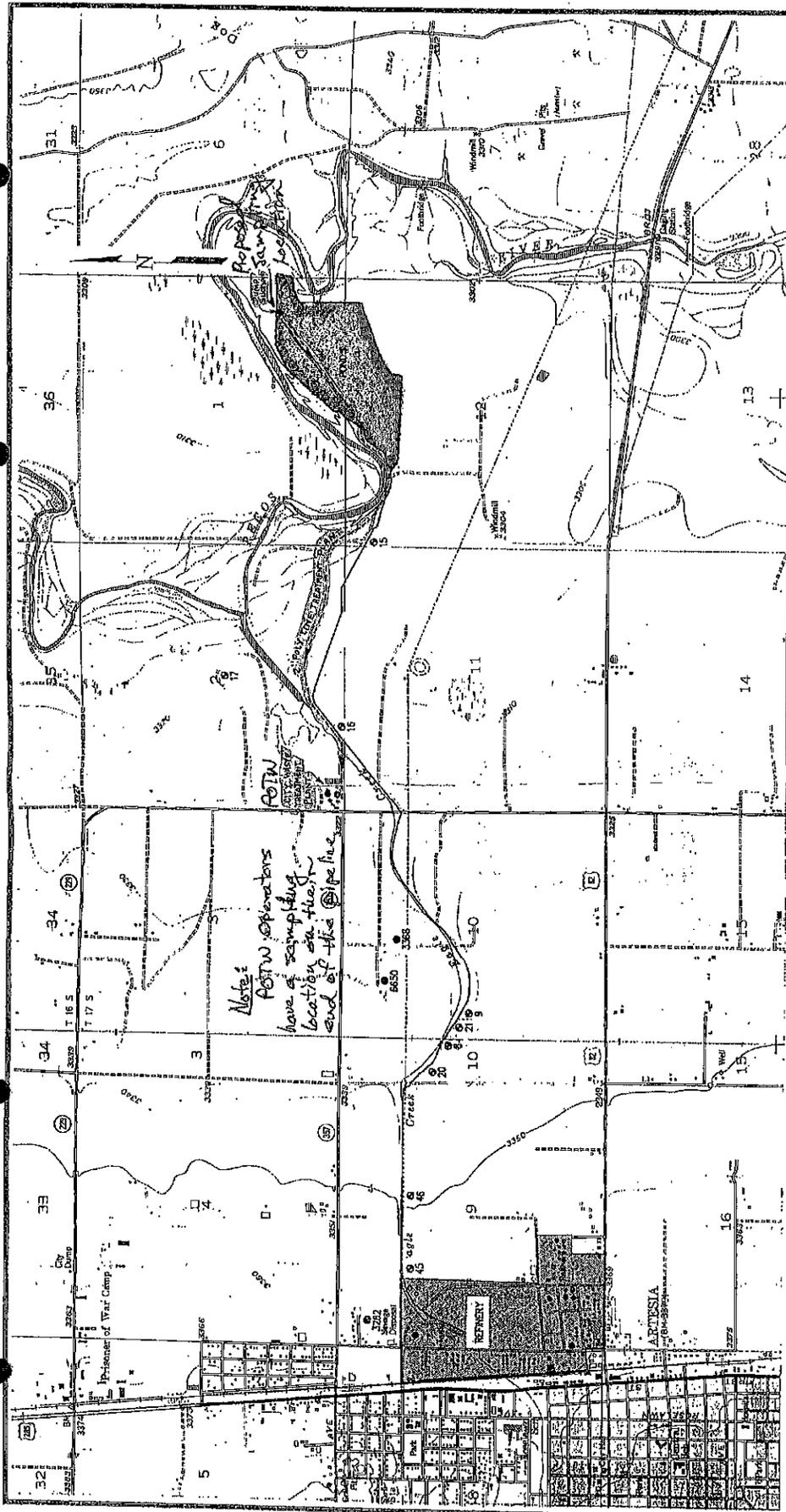
Navajo's wastewater gathering system and refinery wastewater treatment plant meet the definition of a tank system. The Evaporation Ponds do not meet the definition of a tank system but they only receive wastewater that has been treated and has therefore lost the characteristic (i.e. TCLP Toxic for Benzene) that may have made it hazardous.

Navajo's concern is that without the exemption given to wastewater treatment units subject to 307(b) of the Clean Water Act, Navajo's entire existing sewer system and wastewater treatment system would have to be replaced to meet Hazardous Waste treatment unit design standards.

The conveyance system Navajo has installed to discharge treated wastewater to the City POTW, from the ponds, consists of a small diesel powered pump and a 2 inch polyethylene pipe that is routed directly to the POTW. The entire system is sized such that 20,000 gallons is the maximum amount of effluent that can be pumped to the POTW during any 24 hour period. Navajo's normal discharge to the POTW will be approximately 5000 gallons per day on regular business days - excluding holidays and weekends. This is based on operating the pump 6 to 7 hours each day during normal business hours (7 a.m. to 4 p.m.).

5.b. Sample Type Explanation

Navajo feels that grab samples as provided for in 40 CFR 403.12 (6)(5)(iii) are appropriate for this unique situation. The pump that transfers the average of 5000 gallons per day of effluent to the City of Artesia POTW is taking suction from the Evaporation Pond system that contains a maximum of 144 million gallons of water. The average volume in the impoundments is estimated to be 100 million gallons. The average input of 300,000 gallons per day calculates to an average retention time of 333 days and maximum retention time of 480 days. The impoundment system consists of 3 ponds covering a total of 74.7 acres. Flow from the refinery wastewater treatment system enters the first pond while flow to the POTW is pumped from the third or last pond. Such long retention times and mixing by wind and wave action result in a uniform water quality in the last pond that will not vary appreciably over a period as short as 24 hours. Therefore, a composite sample, no matter whether it was flow or time proportional, collected over 24 hours would not likely yield any difference between the first sample caught and the last sample caught by a composite sampler. Grab samples will reflect just as accurately the quality of effluent being discharged to the POTW as 24 hour composite samples.



LEGEND

- DOMESTIC WELLS SAMPLED
- MONITOR WELL LOCATIONS
- THREE-MILE DITCH

2000 0 2000 5000 FEET

NOTE: MAP COMPILED FROM USGS ARTESIA AND SPRING LAKE 7.5-MINUTE QUADRANGLE (1973). MONITOR WELLS ADJACENT TO EVAPORATION POND NOT SHOWN



Prepared for:



Location Map, Navajo Refinery,

PROJECT: LOCATION: ARTESIA, NEW MEXICO
 APPR: DATE: 04/26/93
 DRAWN BY: SCALE: AS SHOWN
 DATE: 04/26/93 FIGURE:

(6) Certification:

A. Is the facility meeting applicable categorical pretreatment standards on a consistent basis? YES X NO _____

B. If no, do you require:

1) additional operation and maintenance (O&M) to achieve compliance? YES _____ NO _____

2) new or additional pretreatment facilities to achieve compliance? YES _____ NO _____

3) Name of Qualified Professional that reviewed this certification:

Name & Title David G. Griffin, Manager of Environmental Affairs
for Water and Waste

Signature

David G. Griffin

Date

3/10/95

(7) Compliance Schedule:

A. If additional O&M or new or additional pretreatment will be required to meet categorical pretreatment standards on a consistent basis, attach a schedule on a separate sheet projecting increments of progress indicating dates for the commencement and completion of major events leading to compliance with the standard. Note: the final compliance date in this schedule shall not be later than the compliance date for the applicable pretreatment standard. Written progress reports are required within 14 days of each of the compliance dates specified in the compliance schedule.

B. Signatory Requirement

I certify under penalty of law that I have personally examined and am familiar with the information in this Baseline Monitoring Report and all attachments, and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the report, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

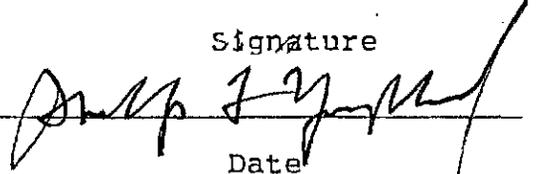
Name - Authorized Representative

Phillip L. Youngblood

Official Title

Director of Environmental Affairs

Signature



Date

3-10-95

TABLE OF CHEMICALS

1. NaCl - Brine Water
2. Unichem 3270
3. Unichem 3030
4. Unichem 3140
5. Unichem 3510
6. Alpha 570
7. HTH Granular
8. Sulfuric Acid
9. Unichem 4000
10. Unichem 1600
11. Unichem 1300
12. Alpha 512
13. Calgon Phree Guard
14. Calgon H-960
15. Calgon CL-10
16. Calgon Conductor XLP 190

Attachment J

RO Reject Water Profile (From EMNRD OCD Records)

Units	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc
CGQSL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Source	WQCC	MCL	WQCC	MCL	WQCC	MCL	*	WQCC	WQCC	WQCC	WQCC	WQCC	*	WQCC	WQCC	WQCC	*	WQCC	WQCC	*	mg/L	mg/L
Date																						
12/27/2004	<0.01	0.00725	0.0659	<0.002	0.071	<0.002	628	<0.005	<0.005	0.00585	<0.2	<0.005	198	<0.005	0.00795	<0.005	4.11	0.01	<0.005	131	0.0104	0.0259
1/16/2007	<0.01	<0.005	0.0658	<0.002	0.0568	<0.002	694	<0.005	<0.005	<0.005	<0.2	<0.005	233	<0.005	0.00744	<0.005	4.48	0.0095	<0.005	234	0.00991	0.00839
2/22/2007	<0.01	0.00941	0.0681	<0.002	0.0643	<0.002	735	<0.005	<0.005	<0.005	<0.2	<0.005	246	<0.005	0.00813	<0.005	4.49	0.00761	<0.005	320	0.0102	0.00734
7/5/2007	0.0168	<0.005	0.0553	<0.002	0.0644	<0.002	600	<0.005	<0.005	<0.005	<0.2	<0.005	176	<0.005	0.00882	<0.005	3.47	0.00768	<0.005	157	0.00974	0.00749
12/14/2007	<0.01	<0.005	0.0704	<0.002	0.0732	<0.002	594	<0.005	<0.005	<0.005	<0.2	<0.005	208	<0.005	0.00952	<0.005	4.32	0.00793	<0.005	218	0.0104	0.00677
2/7/2008	<0.01	<0.005	0.0564	<0.002	0.0773	<0.002	548	<0.005	<0.005	<0.005	<0.2	<0.005	179	<0.005	0.00639	<0.005	3.34	0.0058	<0.005	205	0.0071	<0.005
5/22/2008	<0.01	<0.005	0.0602	<0.002	0.0819	<0.002	562	<0.005	<0.005	<0.005	<0.2	<0.005	180	<0.005	0.00639	<0.005	3.72	0.00877	<0.005	167	0.0116	0.00684
8/29/2008	<0.01	<0.005	0.0783	<0.002	0.0896	<0.002	786	<0.005	<0.005	<0.005	<0.2	<0.005	247	<0.005	0.0108	<0.005	4.58	0.00558	<0.005	152	0.0106	0.00657
12/4/2008	NA	<0.005	0.0759	NA	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00942	<0.005	NA	NA	NA
2/23/2009	<0.01	<0.005	0.0611	<0.01	0.0786	<0.002	698	<0.005	<0.005	<0.005	<0.2	<0.005	215	<0.005	0.00976	<0.005	4.14	0.00893	<0.005	192	0.0107	<0.005
5/7/2009	<0.05	<0.025	0.074	NA	<0.1	<0.01	596	<0.025	<0.025	<0.025	<1	<0.025	198	<0.025	<0.025	<0.025	4	<0.025	<0.025	224	<0.025	<0.025
8/25/2009	NA	<0.005	0.0751	<0.002	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.0082	<0.005	NA	NA	NA
11/9/2009	NA	<0.005	0.0816	NA	<0.005	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00668	<0.005	NA	NA	NA
2/25/2010	NA	<0.005	0.0544	NA	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00702	<0.005	NA	NA	NA
5/27/2010	NA	<0.005	0.0529	NA	NA	<0.002	602	<0.005	NA	NA	NA	<0.005	144	NA	NA	NA	3.22	0.00627	<0.005	215	NA	NA
8/12/2010	NA	<0.005	0.0819	NA	NA	<0.004	651	<0.005	NA	NA	NA	<0.010	186	NA	NA	NA	4.72	0.0106	<0.005	164	NA	NA
11/23/2010	NA	<0.025	0.344	NA	NA	<0.01	NA	<0.025	NA	NA	NA	<0.025	NA	NA	NA	NA	NA	0.0347	<0.025	NA	NA	NA
2/23/2011	NA	NA	0.0583	NA	0.0629	NA	620	NA	NA	NA	NA	NA	166	NA	0.00757	NA	3.51	0.00551	NA	169	0.00869	NA
5/24/2011	NA	NA	0.0681	NA	0.0675	NA	622	NA	NA	0.0229	NA	NA	171	NA	0.0127	NA	3.93	0.012	NA	108	0.0114	0.0167
8/23/2011	0.0226	NA	0.0633	NA	0.0885	NA	604	NA	NA	NA	NA	NA	172	NA	0.0103	NA	3.59	NA	NA	49.8	0.0103	NA
11/16/2011	NA	0.0124	0.0445	NA	NA	NA	520	NA	NA	NA	NA	NA	136	NA	0.00824	0.00568	3.03	NA	NA	40	NA	0.0102

*Note: the limits at the top are NMED GWQB standards

419 related sampling data from Navajo Refining

Parameter	Oil & Grease	Ammonia	Total Chromium
Units	mg/L	mg/L	mg/L
Limit		100	100 NA
Date	[REDACTED]		
6/15/2010	ND	0.874	ND
6/29/2011	ND	3.5	ND
1/19/2012	ND	0.445	ND
11/16/2012	2.44	5.96	ND
1/28/2012	ND	1.85	ND

Attachment K



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2010 - 1/1/2011 (Barrels)



**Review
Complete**

Liquid Production	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
LPGs												
FIELD BUTANE	552	581	0	0	29	0	0.00 %	0	0	29	0	0.00 %
BUTANE	23,851	4,568	126,249	43,070	-102,462	-281	-0.30 %	7,708	-444,752	334,582	917	1.03 %
PROPANE	3,251	2,806	0	385,060	384,615	1,054	1.14 %	0	0	384,615	1,054	1.18 %
WESTERN ISO-BUTANE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total LPGs	27,654	7,954	126,249	428,130	282,181	773	0.84 %	7,708	-444,752	719,225	1,970	2.21 %
Gasolines												
RBOB MUL FOR BLENDING WIETH 5%	0	0	0	6,886,395	6,886,395	18,867	20.48 %	-109,609	7,031,205	-35,201	-96	-0.11 %
RBOB PM FOR BLENDING WIETH 5%	0	0	0	1,079,585	1,079,585	2,958	3.21 %	0	1,082,394	-2,809	-8	-0.01 %
UNLEADED OCTANE 84.5	0	0	0	565,653	565,653	1,550	1.68 %	0	560,080	5,573	15	0.02 %
UNLEADED 86 OCTANE	7,317	8,431	0	1,165,672	1,166,786	3,197	3.47 %	0	1,163,264	3,522	10	0.01 %
UNLEADED 87 OCTANE	0	0	0	2,109,350	2,109,350	5,779	6.27 %	-13,401	2,145,604	-22,853	-63	-0.07 %
PREMIUM 91 OCTANE	3,707	3,818	0	1,431,662	1,431,773	3,923	4.26 %	0	1,451,152	-19,379	-53	-0.06 %
UNLEADED 84 OCTANE T	0	0	0	4,663,691	4,663,691	12,777	13.87 %	0	4,685,617	-21,926	-60	-0.07 %
Total Finished Gasolines	11,024	12,249	0	17,902,008	17,903,233	49,050	53.25 %	-123,010	18,119,316	-93,073	-255	-0.29 %
HEAVY ALKYLATE	10,813	23,535	0	0	12,722	35	0.04 %	-2,210	-2,665,278	2,680,210	7,343	8.23 %
ALKYLATE	7,108	4,737	0	0	-2,371	-6	-0.01 %	2,210	-307,523	302,942	830	0.93 %
REFORMATE	61,221	51,181	0	0	-10,040	-28	-0.03 %	0	-5,391,805	5,381,765	14,745	16.53 %
HEAVY CAT NAPHTHA	0	0	0	0	0	0	0.00 %	-1,233	-188,970	190,203	521	0.58 %
LIGHT CAT NAPHTHA	14,959	21,782	0	0	6,823	19	0.02 %	38,761	-4,843,095	4,811,157	13,181	14.78 %
ISOM GASOLINE	43,164	22,731	0	0	-20,433	-56	-0.06 %	81,794	-2,817,666	2,715,439	7,440	8.34 %
SPLITTER BTMS	0	5,100	0	0	5,100	14	0.02 %	1,471	-221,507	225,136	617	0.69 %
Total Unfinished Gasolines	137,265	129,066	0	0	-8,198	-22	-0.02 %	120,793	-16,435,844	16,306,853	44,676	50.10 %
Total Gasolines	148,289	141,316	0	17,902,008	17,895,035	49,027	53.23 %	-2,217	1,683,472	16,213,780	44,421	49.81 %
Distillates												
JP-8	27,117	9,691	0	637,197	619,772	1,698	1.84 %	0	0	619,772	1,698	1.90 %
LIGHT CYCLE OIL	2,747	494	0	0	-2,253	-6	-0.01 %	-6,361	0	4,108	11	0.01 %
RAW KEROSENE	16,502	52,414	0	0	35,912	98	0.11 %	-15,464	0	51,376	141	0.16 %
RAW DIESEL	72,866	74,143	0	0	1,277	3	0.00 %	1,750	0	-473	-1	0.00 %
# 2 ULTRA LOW SULFUR DIESEL	106,615	56,088	0	11,537,851	11,487,324	31,472	34.17 %	0	0	11,487,324	31,472	35.29 %
# 1 ULTRA LOW SULFUR DIESEL	0	0	0	18,003	18,003	49	0.05 %	0	0	18,003	49	0.06 %
RAW DIESEL #1	0	0	0	0	0	0	0.00 %	-80	0	80	0	0.00 %
Total Distillates	225,846	192,831	0	12,193,051	12,160,036	33,315	36.17 %	-20,155	0	12,180,191	33,370	37.42 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2010 - 1/1/2011 (Barrels)



**Review
Complete**

	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
Liquid Production												
Fuel Oils												
* FUEL OIL	33,113	71,276	0	* 1,518,843	1,557,006	4,266	4.63 %	135,512	772,382	649,112	1,778	1.99 %
Total Fuel Oils	33,113	71,276	0	1,518,843	1,557,006	4,266	4.63 %	135,512	772,382	649,112	1,778	1.99 %
Black Oils												
UNSLUNG SLURRY	21,480	0	0	7,067	-14,413	-39	-0.04 %	-44,701	0	30,288	83	0.09 %
CARBON BLACK OIL	0	17,740	4	162,660	180,396	494	0.54 %	-89,897	0	270,293	741	0.83 %
HEAVY LIGHT CYCLE OIL	7,384	8,348	0	0	964	3	0.00 %	4,270	-253,043	249,737	684	0.77 %
Total Black Oils	28,865	26,088	4	169,727	166,946	457	0.50 %	-130,328	-253,043	550,317	1,508	1.69 %
Slops												
* TRANSMIX	0	0	* 42,263	0	-42,263	-116	-0.13 %	-76,468	0	34,205	94	0.11 %
SLOP NORTH DIVISION	2,388	3,229	0	0	841	2	0.00 %	-33,380	0	34,221	94	0.11 %
SLOP SOUTH DIVISION	127	127	0	0	0	0	0.00 %	-155	0	155	0	0.00 %
SLOP SOUTH DIVISION	11,154	21,495	0	0	10,341	28	0.03 %	-51,847	0	62,188	170	0.19 %
Total Slops	13,669	24,851	42,263	0	-31,081	-85	-0.09 %	-161,850	0	130,769	358	0.40 %
Asphalts												
* 0 PEN AC	11,683	10,183	0	* 320,729	319,229	875	0.95 %	-1,231	-259,237	575,697	1,577	1.77 %
* ASPHALT CEMENT 20	67,368	83,423	* 69,587	* 329,913	276,381	757	0.82 %	-369,773	-152,219	798,373	2,187	2.45 %
ASPHALT CEMENT 85/100	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
ASPHALT CEMENT 120/150	17,902	0	0	0	-17,902	-49	-0.05 %	372,181	-111,883	-278,200	-762	-0.85 %
* ASPHALT PG 64-22	0	33,029	0	* 50,656	83,685	229	0.25 %	0	0	83,685	229	0.26 %
ASPHALT PG 64-22	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
* PG 58-28	0	25,005	0	* 14,874	39,879	109	0.12 %	0	0	39,879	109	0.12 %
Total Asphalts	96,952	151,640	69,587	716,172	701,272	1,921	2.09 %	1,177	-619,339	1,219,435	3,341	3.75 %
Total Liquid Production	574,388	615,956	238,103	32,927,331	32,731,595	89,675	97.36 %	-170,453	1,238,720	31,662,828	86,747	97.27 %
Feedstocks												
Crude Charge	171,928	271,072	30,730,838	8,007	-30,623,686	-83,901	-91.09 %	199,425	0	-30,823,111	-84,447	-94.89 %
NAPHTHA	90,528	85,720	0	0	-4,807	-13	-0.01 %	195,467	0	-200,274	-549	-0.62 %
DESULFURIZED NAPHTHA	4,830	13,890	0	0	9,060	25	0.03 %	0	0	9,060	25	0.03 %
CASINGHEAD (NATURAL GASOLINE)	46,962	40,466	1,362,521	0	-1,369,017	-3,751	-4.07 %	-224,943	-1,238,720	94,646	259	0.29 %
ISO-BUTANE	23,174	10,812	1,616,103	0	-1,628,465	-4,462	-4.84 %	129	0	-1,628,594	-4,462	-5.00 %
GAS OIL	99,942	132,367	0	145	32,571	89	0.10 %	75	0	32,496	89	0.10 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2010 - 1/1/2011 (Barrels)



**Review
Complete**

Feedstocks	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
VACUUM GAS OIL	68,964	32,579	0	1,810	-34,575	-95	-0.10 %	0	0	-34,575	-95	-0.11 %
DE-ASPHALT GAS OIL	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
DESULFURIZED GAS OIL	55,622	54,518	0	0	-1,104	-3	0.00 %	0	0	-1,104	-3	0.00 %
Total Feedstocks	561,949	641,424	33,709,462	9,962	-33,620,025	-92,110	-100.00 %	170,153	-1,238,720	-32,551,458	-89,182	-100.00 %
Non-liquids/Other												
25 BAUME CAUSTIC	103	241	0	0	138	0	0.00 %	0	0	138	0	0.00 %
5 BAUME CAUSTIC	30	259	0	0	230	1	0.00 %	0	0	230	1	0.00 %
DEPROP OFF GAS	0	0	0	109,449	109,449	300	0.33 %	0	0	109,449	300	0.34 %
MOLTEN SULFUR	611	1,428	0	113,962	114,779	314	0.34 %	0	0	114,779	314	0.35 %
HYDROGEN FUEL GAS RECLASS (BFO)			464,055		-464,055	-1,271	-1.38 %			-464,055	-1,271	-1.38 %
Total Non-liquids/Other	743	1,928	464,055	223,411	-239,460	-656	-0.74 %	0	0	-239,460	-656	-0.69 %
Fuel/Gas												
LEA OUTSIDE PURCHASE GAS			356,754		-356,754	-977	-1.06 %			-356,754	-977	-1.06 %
ART OUTSIDE PURCHASE GAS			982,941		-982,941	-2,693	-2.92 %			-982,941	-2,693	-2.92 %
PLANT FUEL CHARGE			760,173		-760,173	-2,083	-2.26 %			-760,173	-2,083	-2.26 %
LEA PLANT FUEL CHARGE			3,405		-3,405	-9	-0.01 %			-3,405	-9	-0.01 %
Total Fuel/Gas			2,103,275		-2,103,275	-5,762	-6.26 %			-2,103,275	-5,762	-6.26 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

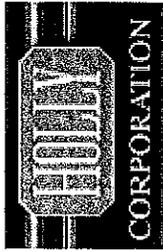
1/1/2011 - 1/1/2012 (Barrels)



**Review
Complete**

Liquid Production		Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
LPGs													
FIELD BUTANE	581	879	0	0	0	298	1	0.00 %	0	0	298	1	0.00 %
BUTANE	4,568	31,298	139,514	106,163		-6,620	-18	-0.02 %	6,953	-402,580	389,007	1,066	1.22 %
PROPANE	2,806	2,432	0	327,031		326,657	895	1.00 %	0	0	326,657	895	1.02 %
Total LPGs	7,954	34,609	139,514	433,194		320,335	878	0.98 %	6,953	-402,580	715,962	1,962	2.24 %
Gasolines													
RBOB MUL FOR BLENDING WIETH 5%	0	0	0	6,504,070		6,504,070	17,819	19.89 %	-8,903	6,599,592	-86,619	-237	-0.27 %
RBOB PM FOR BLENDING WIETH 5%	0	0	0	1,168,940		1,168,940	3,203	3.57 %	0	1,173,227	-4,287	-12	-0.01 %
UNLEADED OCTANE 84.5	0	0	0	171,509		171,509	470	0.52 %	0	190,411	-18,902	-52	-0.06 %
UNLEADED 86 OCTANE	8,431	4,530	0	1,111,982		1,108,081	3,036	3.39 %	0	1,104,953	3,128	9	0.01 %
UNLEADED 87 OCTANE	0	0	0	608,933		608,933	1,668	1.86 %	0	613,547	-4,614	-13	-0.01 %
PREMIUM 91 OCTANE	3,818	2,439	0	1,171,430		1,170,051	3,206	3.58 %	0	1,186,746	-16,695	-46	-0.05 %
AZROB PM FOR BLNDING WIETH 5%	0	0	0	0		0	0	0.00 %	0	1	-1	0	0.00 %
UNLEADED 84 OCTANE T	0	0	0	5,618,042		5,618,042	15,392	17.18 %	0	5,603,877	14,165	39	0.04 %
Total Finished Gasolines	12,249	6,969	0	16,354,906		16,349,626	44,793	49.99 %	-8,903	16,472,354	-113,825	-312	-0.36 %
HEAVY ALKYLATE	23,535	25,218	0	0		1,684	5	0.01 %	0	-2,619,925	2,621,609	7,182	8.20 %
ALKYLATE	4,737	0	0	0		-4,737	-13	-0.01 %	0	-21,075	16,338	45	0.05 %
REFORMATE	51,181	59,154	0	0		7,973	22	0.02 %	0	-4,626,682	4,634,655	12,698	14.50 %
HEAVY CAT NAPHTHA	0	0	0	0		0	0	0.00 %	0	-843	843	2	0.00 %
LIGHT CAT NAPHTHA	21,782	23,868	0	0		2,085	6	0.01 %	0	-4,489,057	4,491,142	12,304	14.05 %
TOLUENE	0	0	0	0		0	0	0.00 %	0	0	0	0	0.00 %
ISOM GASOLINE	22,731	25,867	0	0		3,136	9	0.01 %	8,903	-2,870,186	2,864,419	7,848	8.96 %
SPLITTER BTMS	5,100	8,481	0	0		3,381	9	0.01 %	-889	-742,264	746,534	2,045	2.34 %
ALKYLATE	0	0	0	0		0	0	0.00 %	0	0	0	0	0.00 %
Total Unfinished Gasolines	129,066	142,588	0	0		13,522	37	0.04 %	8,014	-15,370,032	15,375,540	42,125	48.11 %
Total Gasolines	141,316	149,557	0	16,354,906		16,363,148	44,831	50.03 %	-889	1,102,322	15,261,714	41,813	47.76 %
Distillates													
JP-8	9,691	0	0	242,847		233,156	639	0.71 %	-16,055	0	249,211	683	0.78 %
LIGHT CYCLE OIL	494	4,894	0	0		4,399	12	0.01 %	-476	-4,294	9,169	25	0.03 %
RAW KEROSENE	52,414	67,784	0	0		15,370	42	0.05 %	-3,007	0	18,377	50	0.06 %
RAW DIESEL	74,143	115,717	0	0		41,573	114	0.13 %	75,195	0	-33,622	-92	-0.11 %
# 2 ULTRA LOW SULFUR DIESEL	56,088	58,942	0	11,820,622		11,823,476	32,393	36.15 %	-39,132	0	11,862,608	32,500	37.12 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2011 - 1/1/2012 (Barrels)



Liquid Production	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
Distillates												
#1 ULTRA LOW SULFUR DIESEL	0	8,053	0	106,819	114,872	315	0.35 %	10,484	0	104,388	286	0.33 %
Total Distillates	192,831	255,390	0	12,170,288	12,232,847	33,515	37.40 %	27,009	-4,294	12,210,132	33,452	38.21 %
Fuel Oils												
FUEL OIL	71,276	47,599	0	1,981,992	1,958,315	5,365	5.99 %	325,862	582,907	1,049,546	2,875	3.28 %
Total Fuel Oils	71,276	47,599	0	1,981,992	1,958,315	5,365	5.99 %	325,862	582,907	1,049,546	2,875	3.28 %
Black Oils												
CARBON BLACK OIL	17,740	23,491	0	196,493	202,244	554	0.62 %	-144,413	0	346,657	950	1.08 %
HEAVY LIGHT CYCLE OIL	8,348	14,022	0	0	5,674	16	0.02 %	476	-224,148	229,346	628	0.72 %
Total Black Oils	26,088	37,513	0	196,493	207,918	570	0.64 %	-143,937	-224,148	576,003	1,578	1.80 %
Slops												
TRANSMIX	0	0	53,557	0	-53,557	-147	-0.16 %	-81,553	0	27,996	77	0.09 %
SLOP NORTH DIVISION	3,229	2,376	0	0	-853	-2	0.00 %	-5,042	0	4,189	11	0.01 %
SLOP SOUTH DIVISION	127	131	25,325	0	-25,321	-69	-0.08 %	-25,325	0	4	0	0.00 %
SLOP SOUTH DIVISION	21,495	3,620	-25,325	0	7,450	20	0.02 %	-81,633	0	89,083	244	0.28 %
Total Slops	24,851	6,126	53,557	0	-72,281	-198	-0.22 %	-193,553	0	121,272	332	0.38 %
Asphalts												
0 PEN AC	10,183	13,852	0	485,311	488,980	1,340	1.50 %	0	-38,146	527,126	1,444	1.65 %
* ASPHALT CEMENT 20	83,423	50,578	54,228	* 201,037	113,965	312	0.35 %	25,992	-316,319	404,292	1,108	1.27 %
ASPHALT CEMENT 85/100	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
ASPHALT PG 64-22	33,029	11,224	0	219,873	198,067	543	0.61 %	0	0	198,067	543	0.62 %
ASPHALT PG 64-22	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
PG 58-28	25,005	5,819	0	387,351	368,165	1,009	1.13 %	0	0	368,165	1,009	1.15 %
PG 58-22	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total Asphalts	151,640	81,472	54,228	1,293,572	1,169,176	3,203	3.57 %	25,992	-354,465	1,497,649	4,103	4.69 %
Diluents												
ADDITIVE CALCIUM CHLORIDE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total Diluents	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total Liquid Production	615,956	612,267	247,299	32,430,445	32,179,457	88,165	98.39 %	47,437	699,742	31,432,278	86,116	98.36 %
Feedstocks												
* Crude Charge	271,072	286,612	* 30,565,626	0	-30,550,086	-83,699	-93.41 %	131,298	0	-30,681,384	-84,059	-96.01 %
NAPHTHA	85,720	74,625	14,133	0	-25,228	-69	-0.08 %	173,550	0	-198,778	-545	-0.62 %

* Indicates products with adjustments made after month closing

DESULFURIZED NAPHTHA	13,890	13,335	0	0	-555	-2	0.00 %	7,026	0	-7,580	-21	-0.02 %
CASINGHEAD (NATURAL GASOLINE)	40,466	41,175	768,506	0	-767,797	-2,104	-2.35 %	-183,250	-699,742	115,195	316	0.36 %
ISO BUTANE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
ISO-BUTANE	10,812	15,853	1,384,756	0	-1,379,715	-3,780	-4.22 %	0	0	-1,379,715	-3,780	-4.32 %
GAS OIL	132,367	178,881	0	22,571	69,085	189	0.21 %	2,139	0	66,946	183	0.21 %
VACUUM GAS OIL	32,579	0	0	0	-32,579	-89	-0.10 %	-178,200	0	145,621	399	0.46 %
DE-ASPHALT GAS OIL	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
DESULFURIZED GAS OIL	54,518	36,420	0	0	-18,098	-50	-0.06 %	0	0	-18,098	-50	-0.06 %
Total Feedstocks	641,424	646,902	32,733,021	22,571	-32,704,972	-89,603	-100.00 %	-47,437	-699,742	-31,957,793	-87,556	-100.00 %
Non-liquids/Other												
25 BAUME CAUSTIC	241	238	0	0	-3	0	0.00 %	0	0	-3	0	0.00 %
5 BAUME CAUSTIC	259	241	0	0	-18	0	0.00 %	0	0	-18	0	0.00 %
DEPROP OFF GAS	0	0	0	116,078	116,078	318	0.35 %	0	0	116,078	318	0.36 %
NATURAL RUBBER - ASPH ADDITIVE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
MOLTEN SULFUR	1,428	1,236	0	114,343	114,151	313	0.35 %	0	0	114,151	313	0.36 %
NOVABOND	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
HYDROGEN FUEL GAS RECLASS (BFO)	0	0	442,155	0	-442,155	-1,211	-1.35 %	0	0	-442,155	-1,211	-1.35 %
Total Non-liquids/Other	1,928	1,745	442,155	230,421	-211,947	-581	-0.65 %	0	0	-211,947	-581	-0.65 %
Fuel Gas												
LEA OUTSIDE PURCHASE GAS			378,785		-378,785	-1,038	-1.16 %			-378,785	-1,038	-1.16 %
ART OUTSIDE PURCHASE GAS			1,028,694		-1,028,694	-2,818	-3.15 %			-1,028,694	-2,818	-3.15 %
PLANT FUEL CHARGE			690,312		-690,312	-1,891	-2.11 %			-690,312	-1,891	-2.11 %
LEA PLANT FUEL CHARGE			944		-944	-3	0.00 %			-944	-3	0.00 %
Total Fuel Gas			2,098,735		-2,098,735	-5,750	-6.42 %			-2,098,735	-5,750	-6.42 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2012 - 1/1/2013 (Barrels)



Review Complete

Liquid Production	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
LPGs												
FIELD BUTANE	879	409	0	0	-470	-1	0.00 %	0	0	-470	-1	0.00 %
BUTANE	31,298	14,521	146,477	54,461	-108,794	-297	-0.30 %	8,096	-477,697	360,807	986	1.03 %
PROPANE	2,432	2,379	0	354,768	354,715	969	0.99 %	0	0	354,715	969	1.01 %
Total LPGs	34,609	17,309	146,477	409,229	245,451	671	0.86 %	8,096	-477,697	715,052	1,954	2.04 %
Gasolines												
RBOB MUL FOR BLENDING W/ETH 5%	0	0	0	4,545,381	4,545,381	12,419	12.65 %	0	4,595,651	-50,270	-137	-0.14 %
RBOB PM FOR BLENDING W/ETH 5%	0	0	0	1,083,660	1,083,660	2,961	3.01 %	0	1,093,553	-9,893	-27	-0.03 %
UNLEADED 86 OCTANE	4,530	10,339	0	1,247,848	1,253,658	3,425	3.49 %	7,947	1,261,114	-15,403	-42	-0.04 %
UNLEADED 87 OCTANE	0	0	0	369,783	369,783	1,010	1.03 %	0	373,450	-3,667	-10	-0.01 %
PREMIUM 91 OCTANE	2,439	3,879	0	1,329,838	1,331,278	3,637	3.70 %	-7,947	1,351,479	-12,254	-33	-0.04 %
UNLEADED 84 OCTANE T	0	0	0	7,185,810	7,185,810	19,633	19.99 %	0	7,222,792	-36,982	-101	-0.11 %
GASO CONV 88.5 OCT SUB PUL	0	0	0	255,014	255,014	697	0.71 %	0	257,148	-2,134	-6	-0.01 %
GASO AZRBOB 88.5 OCT PUL	0	0	0	377,370	377,370	1,031	1.05 %	0	378,939	-1,569	-4	0.00 %
GASO AZRBOB 84 OCT LOW RV	0	0	0	1,526,671	1,526,671	4,171	4.25 %	0	1,529,617	-2,946	-8	-0.01 %
Total Finished Gasolines	6,969	14,219	0	17,921,375	17,928,625	48,985	49.88 %	0	18,063,743	-135,118	-369	-0.39 %
HEAVY ALKYLATE	25,218	31,904	0	0	6,686	18	0.02 %	0	-2,571,292	2,577,978	7,044	7.36 %
ALKYLATE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
REFORMATE	59,154	70,813	0	0	11,658	32	0.03 %	0	-5,410,492	5,422,150	14,815	15.49 %
LIGHT CAT NAPHTHA	23,868	32,292	0	0	8,424	23	0.02 %	-650	-4,688,833	4,697,907	12,836	13.42 %
ISOM GASOLINE	25,867	28,610	0	0	2,743	7	0.01 %	214,993	-3,704,582	3,492,332	9,542	9.98 %
SPLITTER BTMS	8,481	6,664	0	0	-1,817	-5	-0.01 %	8,374	-756,857	746,666	2,040	2.13 %
ALKYLATE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
ISOM FEED	0	4,993	0	0	4,993	14	0.01 %	49,797	0	-44,804	-122	-0.13 %
Total Unfinished Gasolines	142,588	175,277	0	0	32,689	89	0.09 %	272,514	-17,132,056	16,892,231	46,154	48.25 %
Total Gasolines	149,557	189,496	0	17,921,375	17,961,313	49,075	49.97 %	272,514	931,687	16,757,112	45,764	47.86 %
Distillates												
LIGHT CYCLE OIL	4,894	2,784	55,785	0	-57,695	-158	-0.16 %	-6,870	-49,483	-1,542	-4	0.00 %
RAW KEROSENE	67,784	41,360	0	0	-26,424	-72	-0.07 %	-43,035	0	16,611	45	0.05 %
RAW DIESEL	115,717	69,725	0	0	-45,992	-126	-0.13 %	129,298	0	-175,290	-479	-0.50 %
# 2 ULTRA LOW SULFUR DIESEL	58,942	103,371	0	14,045,427	14,089,856	38,497	39.20 %	-2,168	0	14,092,024	38,503	40.25 %
#1 ULTRA LOW SULFUR DIESEL	8,053	0	0	74,835	66,782	182	0.19 %	-9,876	0	76,658	209	0.22 %
Total Distillates	255,390	217,240	55,785	14,120,262	14,026,326	38,323	39.02 %	67,349	-49,483	14,008,461	38,274	40.01 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2012 - 1/1/2013 (Barrels)



Review Complete

	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
Liquid Production												
Fuel Oils												
FUEL OIL	47,599	70,014	497	2,054,714	2,076,632	5,674	5.78 %	448,112	650,333	978,187	2,673	2.79 %
Total Fuel Oils	47,599	70,014	497	2,054,714	2,076,632	5,674	5.78 %	448,112	650,333	978,187	2,673	2.79 %
Black Oils												
CARBON BLACK OIL	23,491	17,126	0	147,261	140,897	385	0.39 %	-194,004	-1,982	336,883	920	0.96 %
HEAVY LIGHT CYCLE OIL	14,022	10,011	0	0	-4,011	-11	-0.01 %	-10,571	-185,245	191,805	524	0.55 %
Total Black Oils	37,513	27,138	0	147,261	136,886	374	0.38 %	-204,575	-187,227	528,688	1,445	1.51 %
Slops												
TRANSMIX	0	0	69,508	0	-69,508	-190	-0.19 %	-103,567	0	34,059	93	0.10 %
SLOP NORTH DIVISION	2,376	2,432	0	0	56	0	0.00 %	0	0	56	0	0.00 %
SLOP SOUTH DIVISION	131	127	0	0	-4	0	0.00 %	0	0	-4	0	0.00 %
SLOP SOUTH DIVISION	3,620	4,819	0	0	1,200	3	0.00 %	-4,512	0	5,711	16	0.02 %
Total Slops	6,126	7,378	69,508	0	-68,257	-186	-0.19 %	-108,079	0	39,822	109	0.11 %
Asphalts												
* 0 PEN AC	13,852	20,110	0	* 616,731	622,990	1,702	1.73 %	0	-14,908	637,898	1,743	1.82 %
20 PEN AC	0	0	0	0	0	0	0.00 %	0	-7,077	7,077	19	0.02 %
ASPHALT CEMENT 20	50,578	72,370	0	119,627	141,419	386	0.39 %	-4,949	-384,107	530,475	1,449	1.52 %
ASPHALT PG 64-22	11,224	0	0	3,130	-8,094	-22	-0.02 %	-7,627	0	-467	-1	0.00 %
PG 58-28	5,819	18,413	177	336,564	348,981	954	0.97 %	82,818	-7,531	273,694	748	0.78 %
PG 58-22	0	0	0	5,954	5,954	16	0.02 %	-75,191	0	81,145	222	0.23 %
Total Asphalts	81,472	110,893	177	1,082,006	1,111,250	3,036	3.09 %	-4,949	-413,623	1,529,822	4,180	4.37 %
Diluents												
ADDITIVE CALCIUM CHLORIDE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total Diluents	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
Total Liquid Production	612,267	639,467	272,444	35,734,847	35,489,603	96,966	96.74 %	478,468	453,990	34,557,145	94,418	96.70 %
Feedstocks												
Crude Charge	286,612	285,915	34,342,731	0	-34,343,429	-93,835	-95.55 %	45,851	0	-34,389,280	-93,960	-88.22 %
NAPHTHA	74,625	189,171	0	0	114,546	313	0.32 %	-9,335	0	123,881	338	0.35 %
DESULFURIZED NAPHTHA	13,335	12,671	0	0	-664	-2	0.00 %	0	0	-664	-2	0.00 %
CASINGHEAD (NATURAL GASOLINE)	41,175	48,405	686,840	0	-679,610	-1,857	-1.89 %	-265,701	-453,990	40,081	110	0.11 %
ISO BUTANE	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %

* Indicates products with adjustments made after month closing



HOPS Production

Navajo - Artesia/Lovington Combined

1/1/2012 - 1/1/2013 (Barrels)



	Begin Inv	End Inv	Receipts	Shipments	Production	Daily Avg	Avg %	Transfers	Blends	Yield	Daily Avg	Avg %
Feedstocks												
ISO-BUTANE	15,853	9,430	1,344,246	0	-1,350,668	-3,690	-3.76 %	148	0	-1,350,817	-3,691	-3.86 %
GAS OIL	178,881	182,437	0	289,088	292,644	800	0.81 %	-249,431	0	542,075	1,481	1.55 %
DE-ASPHALT GAS OIL	0	0	0	0	0	0	0.00 %	0	0	0	0	0.00 %
DESULFURIZED GAS OIL	36,420	60,392	0	0	23,971	65	0.07 %	0	0	23,971	65	0.07 %
Total Feedstocks	646,902	788,420	36,373,817	289,088	35,943,211	-9,205	-100.00 %	-478,468	-453,990	-95,010,753	-95,658	-100.00 %
Non-liquids/Other												
25 BAUME CAUSTIC	238	159	0	0	-80	0	0.00 %	0	0	-80	0	0.00 %
5 BAUME CAUSTIC	241	178	0	0	-63	0	0.00 %	0	0	-63	0	0.00 %
DEPROP OFF GAS	0	0	0	125,254	125,254	342	0.35 %	0	0	125,254	342	0.36 %
MOLTEN SULFUR	1,236	705	0	122,226	121,695	333	0.34 %	0	0	121,695	333	0.35 %
HYDROGEN FUEL GAS RECLASS (BFO)			466,313		-466,313	-1,274	-1.30 %			-466,313	-1,274	-1.30 %
Total Non-liquids/Other	1,715	1,042	466,313	247,480	-219,506	500	-0.61 %	0	0	-219,506	-600	-0.59 %
Fuel Gas												
LEA OUTSIDE PURCHASE GAS			405,670		-405,670	-1,108	-1.13 %			-405,670	-1,108	-1.13 %
ART OUTSIDE PURCHASE GAS			1,223,003		-1,223,003	-3,342	-3.40 %			-1,223,003	-3,342	-3.40 %
PLANT FUEL CHARGE			697,056		-697,056	-1,905	-1.94 %			-697,056	-1,905	-1.94 %
LEA PLANT FUEL CHARGE			0		0	0	0.00 %			0	0	0.00 %
Total Fuel Gas			2,325,729		-2,325,729	-6,354	-6.47 %			-2,325,729	-6,354	-6.47 %

* indicates products with adjustments made after month closing

Attachment L



Material Safety Data Sheet

1. Product and company identification

Product name : CoPhos PLUS 215Z
Supplier : Baker Petrolite
A Baker Hughes Company
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/MSDSs Call: 800-231-3606
(8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400

Material Uses : Special: Scale Inhibitor.

Code : CPS215Z

Validation date : 2/8/2010.

Print date : 2/8/2010.

Version : 5

Responsible name : Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606

In case of emergency : CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petrolite: 800-231-3606
(001)281-276-5400
CANUTEC: 613-996-6666 (Canada 24 hours)
CHEMTREC Int'l 01-703-527-3887 (International 24 hour)

2. Hazards identification

Physical state : Liquid.

Odor : Acrid. [Slight]

Color : Amber. [Light]

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : DANGER!
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. ASPIRATION HAZARD.
Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Corrosive to the respiratory system.

Ingestion : Toxic if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. May cause burns to mouth, throat and stomach.

Skin : Corrosive to the skin. Causes burns.

Eyes : Corrosive to eyes. Causes burns.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Target organs : Contains material which may cause damage to the following organs: lungs, gastrointestinal tract, cardiovascular system, upper respiratory tract, skin, eye, lens or cornea.

Over-exposure signs/symptoms

Inhalation : respiratory tract irritation, coughing

2. Hazards identification

- Ingestion** : stomach pains, nausea or vomiting
- Skin** : pain or irritation, redness, blistering may occur
- Eyes** : pain, watering, redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Phosphoric Acid	7664-38-2	10 - 30
Zinc chloride	7646-85-7	1 - 5
Organic phosphonate	2809-21-4	1 - 5

4. First aid measures

- Eye contact** : Get medical attention immediately. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open.
- Skin contact** : Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear suitable protective clothing and gloves. Remove contaminated clothing and shoes.

5. Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous thermal decomposition products** : carbon dioxide, carbon monoxide, phosphorus oxides, halogenated compounds, metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	Notations
Phosphoric Acid	US ACGIH	-	1	-	-	3	-	-	-	-	
	OSHA PEL	-	1	-	-	-	-	-	-	-	
	OSHA PEL 1989	-	1	-	-	3	-	-	-	-	
Zinc chloride	US ACGIH	-	1	-	-	2	-	-	-	-	[a]
	OSHA PEL	-	1	-	-	-	-	-	-	-	[a]
	OSHA PEL 1989	-	1	-	-	2	-	-	-	-	[a]

Form: [a]Fume

Consult local authorities for acceptable exposure limits.

Only components of this product with established exposure limits appear in the box above.

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

8 . Exposure controls/personal protection

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before re-use.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant gloves: Nitrile or Neoprene gloves.
- Eyes** : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
- Skin** : Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : Closed cup: >93.4°C (>200.1°F) [TCC]
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Color** : Amber. [Light]
- Odor** : Acrid. [Slight]
- pH** : 1 [Conc. (% w/w): 100%]
: Neat - without dilution.
- Boiling/condensation point** : Not available.
- Initial Boiling Point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : 1.2004 (15.6°C)
- Density** : 10 (lbs/gal)
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- VOC** : Not available.
- Viscosity** : Not available.
- Solubility (Water)** : Soluble
- Vapor pressure** : Not available.
- Pour Point** : Not available.
- Partition coefficient (LogKow)** : Not available.

10 . Stability and Reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Do not swallow.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, metals, acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phosphoric Acid	LD50 Dermal	Rabbit	2740 mg/kg	-
	LD50 Oral	Rat	1.25 g/kg	-
	LC50 Inhalation Vapor	Rabbit	>850 mg/m ³	1 hours
Zinc chloride	LD50 Oral	Rat	350 mg/kg	-
Organic phosphonate	LD50 Oral	Rat	2800 mg/kg	-
	LD50 Oral	Rat	2400 mg/kg	-

Chronic toxicity Remarks

1) Phosphoric Acid

Not available.

2) Zinc chloride

This product contains Zinc chloride. Zinc chloride has tested positive in several in vitro genotoxicity tests. It produced significantly greater morphological transformation in the presence of metabolic activation when tested using mouse cells in the Cell transformation Assay. It also produced a significant increase in forward mutations in the Mouse lymphoma assay (HSDB).

There is no evidence that Zinc chloride causes cancer in animals. Prolonged contact can cause skin burns and ulcers. Repeated exposure to Zinc chloride can cause scarring of the lungs (NJFS, 2000).

3) Organic phosphonate

This product contains Organic phosphonate. Organic Phosphonate has produced some reproductive and teratogenic effects in test animals. Reproductive effects such as decreased implantations and decreased live fetuses were been reported following oral dosing in rats (HSDB). Teratogenicity was evaluated in pregnant rats orally exposed by gavage to Organic phosphonate. Significant differences were observed between treated and control animals with respect to a decreased incidence of soft tissue abnormalities (HSDB).

12 . Ecological information

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Contains: Phosphoric Acid, Zinc chloride)	8	III		-
TDG Classification	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Contains: Phosphoric Acid, Zinc chloride)	8	III		-
IMDG Class	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Contains: Phosphoric Acid, Zinc chloride)	8	III	 	Emergency schedules (EmS) F-A S-B

PG* : Packing group

DOT Reportable Quantity Phosphoric Acid, 4730 gal of this product.
Zinc chloride, 3019 gal of this product.

Marine pollutant Not applicable.

North-America NAERG : 154

15 . Regulatory information

HCS Classification : Toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Phosphoric Acid; zinc chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
CoPhos PLUS 215Z: Immediate (acute) health hazard, Delayed (chronic) health hazard

15 . Regulatory information

CERCLA: Hazardous substances.: Phosphoric Acid: 5000 lbs. (2270 kg); zinc chloride: 1000 lbs. (454 kg);

Clean Water Act (CWA) 307: zinc chloride

Clean Water Act (CWA) 311: Phosphoric Acid; zinc chloride

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Supplier notification	: Zinc chloride	7646-85-7	1 - 5

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

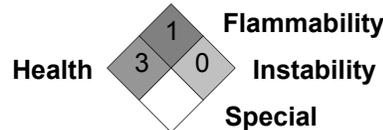
WHMIS (Canada) : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class E: Corrosive material

Canada (CEPA DSL): : At least one component is not listed.

16 . Other information

Label requirements : CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. ASPIRATION HAZARD.

National Fire Protection Association (U.S.A.) :



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▣ Indicates information that has changed from previously issued version.

Notice to reader

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