

**GW - 28**

**GENERAL  
CORRESPONDENCE**

**YEAR(S):  
1978-2007**

**Chavez, Carl J, EMNRD**

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, March 23, 2007 9:05 AM  
**To:** 'Byrd, Jeff'  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: 2007-03-22 fuel oil RR car loading spill

Jeff:

I am in receipt of your notification. Thank you.

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**From:** Byrd, Jeff [mailto:Jeff.Byrd@hollycorp.com]  
**Sent:** Friday, March 23, 2007 8:55 AM  
**To:** Price, Doug; Chavez, Carl J, EMNRD  
**Cc:** Moore, Darrell; Lackey, Johnny  
**Subject:** RE: 2007-03-22 fuel oil RR car loading spill

At 9:47 am on 3/23/07 I called Mike Bratcher with the OCD Artesia office and left a message that we had had a spill at approximately 5 pm on 3/22/07 at the PG rack. I reported that we had released of approximately 15 barrels of fuel oil and that we were cleaning it up this morning.

Jefferson L. Byrd, EI  
Environmental Scientist

Off. 505-748-3311  
Cell 505-703-5068

**CONFIDENTIAL**

This e-mail message and all corresponding e-mail messages, including all attachments, are intended solely for the individual(s) named above. They contain confidential and/or proprietary information. Do not forward, copy, distribute or otherwise relay the messages or their content to any individual without first contacting the sender of this message. If you have received this e-mail message in error, do not read, forward, copy or distribute it or any of its content to anyone. In addition, please notify the sender that you have received this message immediately by return e-mail and delete it.

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3/23/2007

## **Enclosure to March 6, 2007 Letter to OCD**

### Enclosed Items Summary:

- Navajo's May 31, 2002 response to the October 2001 OCD inspection
- Navajo's December 4, 2003 letter to NMED regarding the schedule for submitting work plans in accordance with the Closure-Post Closure Permit
- NMED's August 22, 2006 letter to Navajo regarding the Group 2 SWMU/AOC Work Plan addressing the old API and South API.
- Navajo's January 11, 2007 letter to NMED requesting an extension for the Group 2 Work Plan
- Drawings of underground process and wastewater lines for the GOHT unit (Unit No. 33) [Drawing No. D-33-PD-160; Rev. 1, and Drawing No. D-33-PD-188; Rev. 0]
- October 10, 2000 NOT submittal by Navajo to void NPDES permit for stormwater runoff
- December 6, 2000 letter from EPA to Navajo verifying that the NPDES permit was voided
- Spreadsheet for inspections/testing of sewer lines, boxes, and hubs
- Sump inspection/testing spreadsheet
- Individual test record form for sewer lines, boxes, hubs, and sumps
- Drawings showing underground process and wastewater lines for the new ROSE unit [Drawing No. 03-01-D-01; Rev. 5, and Drawing No. 03-01-D-02; Rev. 5]
- Vacuum truck sump pumping record
- Aerial photo marked to indicate sump locations
- Updated map [Drawing No. 90-49-E; Rev. 4] which includes the existing and proposed retention basins, new recovery wells, and the wastewater line to the underground injection wells
- Procedures Navajo used to hydrotest the wastewater line to the injection wells
- OCD (Carl Chavez) November 3, 2006 email to Navajo accepting the results of the procedure used to hydrotest the wastewater line to the injection wells
- SPCC plan drawing [Drawing No. 55-Z-6-D; Rev. 3] for Navajo's Artesia, NM refinery

**Chavez, Carl J, EMNRD**


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**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, March 02, 2007 9:39 AM  
**To:** 'Whaley, Don'  
**Cc:** Jones, Brad A., EMNRD; Price, Wayne, EMNRD; ed.hansen@state.nm.us;; Resinger, Jim; Moore, Darrell; Price, Doug; Byrd, Jeff; Bolding, David; Swafford, Ricky  
**Subject:** RE: GW-028 Inspection Scope of Requested Information

Don:

I see that Navajo had responded to Mr. Price's October 22, 2001 inspection items. We basically went through them together, went to visually assess these areas during our inspection and in response to your e-mail, I recommend that Navajo scrutinize your responses to make sure you have complied with the dates for OCD receipt of the items, i.e., Item 8 in the May 31, 2002 letter to OCD, Navajo should seek to verify that it complied with the October 15, 2002 closure report date and provide follow-up any requirements with date provisions. Consequently, I believe that the May 31, 2002 letter addresses some of the inspection items, but there some items with subsequent dates for submittal, and Navajo should provide clarification of reports sent to OCD to address such an item.

In addition to Navajo checking that the items have been addressed, the OCD is also working to assess whether all of the inspection items were adequately addressed in comparison with our most recent inspection, communication, and photos. Anything that Navajo can point to showing it addressed an open item from the May 31, 2002 letter would be appreciated.

Thank you.

---

**From:** Whaley, Don [mailto:Don.Whaley@hollycorp.com]  
**Sent:** Friday, March 02, 2007 8:34 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Jones, Brad A., EMNRD; Price, Wayne, EMNRD; ed.hansen@state.nm.us;; Resinger, Jim; Moore, Darrell; Price, Doug; Byrd, Jeff; Bolding, David; Swafford, Ricky  
**Subject:** GW-028 Inspection Scope of Requested Information

Carl,  
 Navajo is working to respond to the information requests you made during your February 19 and 20 inspection, and February 21 close-out meeting at Navajo's Artesia refinery. You and Darrell Moore agreed that Navajo would provide OCD with certain information within 2 weeks of the inspection.

We plan to ship our response on Tuesday March 6, so you should receive it on March 7.

In order to assure you receive the desired information, we believe it is best to clarify the scope of the information request. This clarification holds even more significance since an unanticipated urgent matter arose for Darrell resulting in his being out of the office since last Friday.

A significant amount of information you solicited originated from the October 2001 inspection. We identified our May 31, 2002 response to the October 2001 inspection questions and a copy of the response letter is attached for your convenience. Unless you direct otherwise, Navajo will consider the attachment and OCD files to comprise the response to your information requests with respect to the 2001 inspection.

The remaining information you requested relates to the GW-028 discharge plan itself. We believe the scope of your requests will be met by the following:

Conditions 8 and 9

Navajo plans to provide a sample of the inspection results spreadsheet and hydro-test sheets used by our maintenance department. These have been updated to include repair information and installation dates or date ranges, where known, and the addition of a "pass/fail" section. Navajo also plans to provide drawings of underground process and wastewater lines for the ROSE unit.

Condition 11

We plan to provide the schedule for Navajo's routine inspection of spill collection/prevention systems.

3/2/2007



Condition 17.H

Navajo plans to provide an updated map which will include the existing and proposed retention basins, new recovery wells, and the wastewater line to the underground injection wells.

We believe this covers the scope of your information requests requiring a 2-week response.

Navajo understands that you intend to communicate directly with NMED regarding the post closure permit and other relevant items. We also understand that additional correspondence may be appropriate to assist OCD in renewing Navajo's Discharge Permit.

Please reply to this email to express your concurrence with this scope or to identify other information you requested which we did not identify herein.

Your timely response will be appreciated and will serve to facilitate Navajo in providing you the information you need to renew GW-028.

**Don Whaley**

**Sr. Environmental Specialist**

**Navajo Refining Company, L.P.**

[don@navajo-refining.com](mailto:don@navajo-refining.com)

**phone: 505.746.5398**

**cell: 505.703.5057**

**fax: 505.746.5421**

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

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**Chavez, Carl J, EMNRD**

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Thursday, February 15, 2007 2:05 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** RE: Navajo- Artesia

Carl

Contact Jeff Byrd at Navajo to send you an updated map of the facility. Navajo has been updating their facility map with the new wells, this includes the newly installed recovery wells by Bolton Road: [jeffbyrd@navajo-refining.com](mailto:jeffbyrd@navajo-refining.com); 505-748-3311. One a side note, I have been pulling together all the boring/well construction worksheets for the monitoring wells at Navajo, when I have completed this I will send you a copy. I will contact Navajo for the well logs not in our administrative record. Let us know how the inspection goes. Talk to you soon.

Hope

Hope

FYI, I will be conducting an annual inspection of the Navajo- Artesia Refinery beginning this coming Monday. I will be verifying the location of the new RWs E and S of the hwy from the refinery and at other various locations. In addition, I may be pulling a groundwater sample to physically look at any product levels there. I will also inform Darrell, that we need an updated site map with well logs, etc., to show all new and old wells at the facility. I think we want the new RWs to be included and sampled similar to the rest of the RWs in the table that we put together for Navajo (i.e., sample schedule, etc.). I don't think we need a new report, but we do need at a minimum the above. Please contact me if you have questions or comments. Thank you.

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Thursday, February 15, 2007 11:51 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Navajo

Carl

I will get you the boring log information when I get back and look over the other information in your email. It will not be until next week. I am currently stuck CT until Saturday due to all the storms that went through the midwest and east coast.

Hope

Hope Monzeglio  
Environmental Specialist  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505  
Phone: (505) 428-2545  
Fax: (505)-428-2567  
[hope.monzeglio@state.nm.us](mailto:hope.monzeglio@state.nm.us)

Hope Monzeglio  
Environmental Specialist

2/16/2007

New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505  
Phone: (505) 476-6045  
Main No.: (505)-476-6000  
Fax: (505)-476-6030  
[hope.monzeglio@state.nm.us](mailto:hope.monzeglio@state.nm.us)

**Websites:**

**New Mexico Environment Department**  
**Hazardous Waste Bureau**

Please note the new phone numbers

**Chavez, Carl J, EMNRD**

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Thursday, February 15, 2007 11:51 AM  
**To:** Chavez, Carl J, EMNRD  
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[hope.monzeglio@state.nm.us](mailto:hope.monzeglio@state.nm.us)

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thu 2/8/2007 1:49 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Navajo

Hope:

Darrell Moore sent me a Oct. 31, 2006 letter addressing HWB-OCD discharge plan items before OCD could issue a new discharge plan. I believe HWB and OCD met to go over outstanding OCD items in the old discharge plan to get input from HWB and then we sent a e-mail on Aug. 14, 2006 to Navajo with our comments. The above letter was mailed to the OCD responding to our comments, but it appears that based on their investigation that Navajo has not submitted a report. The only official report I have received is dated December 2006, "SWMU-1/AOC Group 1 Additional Corrective Action Investigation Work plan RCRA Permit No. D048918817."

I will send this over the letter to you today; however, I notice that boring logs were not included in the letter and the RW-11-01 - RW-11-08 designations do not entirely correspond. Please send me the boring information. Darrell also forwarded an old Sept. 1997 report that contained a map depicting the location of borings at the site, which also do not entirely correspond to the RW designations. Navajo also submitted a Oct. 2, 2006 "Response to Letter Dated August 17, 2006: Notice of Deficiency GW Monitoring Work Plan" that outlines wells to be monitored, frequency, etc.

Consequently, I do not believe that the OCD has received an investigation report based on the OCD's August 14, 2006 e-mail to Navajo. Please send me the boring logs. I think we need to look at Navajo's Oct. 2, 2006 reply w/ monitor frequency, etc. to work to include the new RWs. Let me know what you think? Not sure we need another report, but a new site map with all new wells, boring logs for new wells, etc. Thanks.

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Monday, February 05, 2007 1:37 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** Navajo

Carl

2/16/2007

I just wanted to check in about Navajo and the investigation they did on Bolton Rd south of HWY 82 where they installed 8 recovery wells (RW-11-01 - RW-11-08). I received the boring logs as a response to an NMED letter but am not sure if an investigation report was submitted to OCD? If so can we get a copy. If not and you are expecting one, I can contact Darrell to make sure we are cc on the report. We want to make sure Navajo will collect depth to water/depth to product measurements when they are doing their sampling. I am not sure if OCD already requested this?

Thanks

Hope

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

**Websites:**

**New Mexico Environment Department**  
**Hazardous Waste Bureau**

Please note the new phone numbers

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, February 08, 2007 1:49 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Navajo

Hope:

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**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** Navajo

Carl

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2/8/2007

**Chavez, Carl J, EMNRD**

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**Sent:** Monday, February 05, 2007 1:37 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** Navajo

Carl

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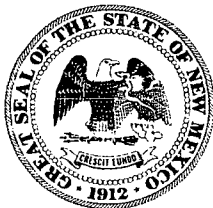
Thanks

Hope

Hope Monzeglio  
Environmental Specialist  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505  
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**Websites:**  
**New Mexico Environment Department**  
**Hazardous Waste Bureau**

Please note the new phone numbers



BILL RICHARDSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*  
*Telephone (505) 476-6000*  
*Fax (505) 476-6030*  
*www.nmenv.state.nm.us*



RON CURRY  
SECRETARY

CINDY PADILLA  
DEPUTY SECRETARY

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 18, 2007

RECEIVED

JAN 22 2007

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

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

**RE: APPROVAL OF THE EXTENSION REQUEST TO THE  
2006 ANNUAL GROUNDWATER MONITORING REPORT  
NAVAJO REFINING COMPANY, ARTESIA REFINERY  
EPA ID No. NMD048918817  
HWB-NRC-MISC**

Dear Mr. Moore:

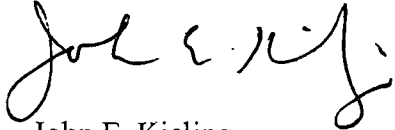
The New Mexico Environment Department (NMED) is in receipt of Navajo Refining Company's (Permittee) e-mail titled *2006 Annual Groundwater Monitoring Report* dated January 11, 2007. The e-mail requests an extension to the Annual Groundwater Monitoring Report (Groundwater Report) originally due February 28, 2007 to April 30, 2007. NMED hereby approves this extension to the Groundwater Report which must be submitted to NMED on or before April 30, 2007. The 2007 Annual Groundwater Report (that reports on the 2007 groundwater data) will resume to its original due date of February 28, 2008.



Mr. Moore  
Navajo Refining Company, Artesia Refinery  
January 18, 2007  
Page 2 of 2

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

Sincerely,



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

JE:hm

cc: H. Monzeglio, NMED HWB  
W. Price, OCD-Santa Fe office  
J. Byrd, Navajo  
S. Hall, Arcadis  
File: Reading and NRC 2007  
HWB-NRC MISC

2007 JAN 16 PM 12 03



CORPORATION

100 Crescent Court  
Suite 1600

Dallas, Texas 75201-6927

Executive Offices

Phone: (214) 871-3555

December 21, 2006

To Whom It May Concern:

Holly Corporation and its subsidiaries (Holly), is in the process of centralizing incoming invoices. We are requesting that all vendors send invoices to the address listed below. No other address should be used for invoices except on a case by case basis (maybe where confidentiality is an issue). Please note that this change is effective immediately and continuing to send invoices to any other address may delay payment.

Invoices associated with purchase orders (PO) issued after November 30, 2006 should follow the billing instructions on the PO. The billing address on PO's issued prior to November 30, 2006 should be changed to conform with this notice. **Be sure to include the PO Number on the face of your invoice.**

In addition, Holly Corporation has reviewed our internal control process related to "House Accounts" or "Open Direct Charge Accounts". Please close them if you have one. It is Holly's intent to implement a company wide practice of utilizing "purchase orders" or Credit Cards for obtainment of materials and supplies. Since we cannot validate the authorizing person(s) on a "House Account", Holly Companies will no longer remit payments to vendors for those accounts.

Vendors should be made aware of the fact that Holly operates under several different names and therefore invoices submitted with an improper name may be returned as either "invalid" or requires "additional information". **Additionally, please include a contact name associated with the company you are doing business with.** The following is a listing of Holly companies impacted by this change and the appropriate address to use when invoicing.

*Navajo Refining Company  
Holly Asphalt  
Holly Refining and Marketing*

*Holly Corporation  
Holly Petroleum Inc.  
Holly Energy Partners*

*Rio Grande Pipeline  
Holly Logistic Services  
Navajo Pipeline*

**At this time there is no address change for invoices addressed to  
PO Box 1290 Or 311 W. Quay  
Artesia, NM 88210 Artesia, NM 88210**

**All others please change mailing address to**

*Company Name  
Attn: Vendor Payable Group  
P.O. Box 1490  
Artesia, New Mexico 88210*

We appreciate your attention in this matter. If you have any questions regarding this change please contact me at (505)746-5326.

Sincerely,

Dorinda Johnson  
Accounts Payable Supervisor



## REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

January 11, 2007

Ms. Hope Monzeglio  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505

**RE: Extension for Submittal of Group 2 Workplan**

Dear Ms. Monzeglio,

This letter is sent to request an extension of the due date for the Group 2 Workplan to April 15, 2007. Due to miscommunication within Navajo, we were under the impression that the Group 2 Workplan would not be started until the Group 1 issues had been resolved. NMED's letter of August 22, 2006 clearly states that the Group 2 Workplan was due December 29, 2006. We apologize for this mistake.

If you have any questions, please call me at 505-748-3311. Thank you for your attention to this matter.

Sincerely,  
**NAVAJO REFINING COMPANY**

Darrell Moore  
Environmental Manager for Water and Waste



BILL RICHARDSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*

*Telephone (505) 476-6000*

*Fax (505) 476-6030*

*www.nmenv.state.nm.us*



RON CURRY  
SECRETARY

CINDY PADILLA  
DEPUTY SECRETARY

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 9, 2007

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

**RE: APPROVAL OF EXTENSION REQUEST TO THE NOTICE OF DEFICIENCY  
2005 GROUNDWATER MONITORING REPORT  
NAVAJO REFINING COMPANY, ARTESIA REFINERY  
EPA ID No. NMD048918817  
HWB-NRC-06-001**

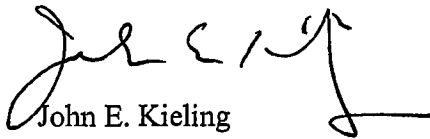
Dear Mr. Moore:

The New Mexico Environment Department (NMED) is in receipt of Navajo Refining Company's (Permittee) e-mail titled *Extension Request, Navajo Groundwater Monitoring Report NOD response* dated January 8, 2007, requesting a 60 day extension to respond to the Notice of Deficiency (NOD) *2005 Groundwater Monitoring Report*. This is the Permittee's second extension request. NMED hereby approves the 60 day extension. The response to the *NOD 2005 Annual Groundwater Report* is due to NMED on or before March 16, 2007.

Mr. Moore  
Navajo Refining Company, Artesia Refinery  
January 9, 2007  
Page 2 of 2

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

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling", with a stylized flourish at the end.

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

cc: H. Monzeglio, NMED HWB  
W. Price, OCD-Santa Fe office  
S. Hall, Arcadis  
File: Reading and NRC 2007  
HWB-NRC 06-001

**Chavez, Carl J, EMNRD**

---

**From:** Moore, Darrell [Darrell.Moore@hollycorp.com]  
**Sent:** Tuesday, January 09, 2007 10:05 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Hydrottest

Here are the reports from the hydrottest of the injection well pipeline. Let me know if you have any questions. I can send hard copies if you need them.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

**CONFIDENTIAL**

This e-mail message and all corresponding e-mail messages, including all attachments, are intended solely for the individual(s) named above. They contain confidential and/or proprietary information. Do not forward, copy, distribute or otherwise relay the messages or their content to any individual without first contacting the sender of this message. If you have received this e-mail message in error, do not read, forward, copy or distribute it or any of its content to anyone. In addition, please notify the sender that you have received this message immediately by return e-mail and delete it.

**HOLLY ENERGY PARTNERS  
HYDROSTATIC TEST REPORT**

**5 MILES OF 8 5/8" .219 W.T. X-42 WEST  
SECTION FOR THE 8" EFFLUENT  
WASTE WATER**

**D & D CONSTRUCTION  
CONTRACTOR**

**NOVEMBER 1, 2006**

**CHOAT ENTERPRISES, INC.  
PIPELINE TESTING  
3300 SHERBROOK, ODESSA TX 79762  
432-367-8459**

CHOAT ENTERPRISES  
PIPELINE TESTING  
3300 SHERBROOK  
ODESSA TX 79762  
432-367-8459

**TEST SUMMARY:**

**Objective:** To hydrostatic test 5 miles of 8 5/8" .219 W.T. X-42 West Section for the 8" Effluent Waste Water.

The line was covered.

**Personnel:** Choat Enterprises, Inc. Pipeline Testing, was represented by Bobby McNabb. James Choat was Test Engineer.

**Equipment:** A Kerr Model 3250 B with a 1" bore and a 2 1/2" stroke, displacing 0.025 gal. per revolution (90% efficiency) powered by a Wisconsin engine, was used to finish filling and to pressure the piping.

Water was hauled to the job site by Holly Energy.

**Instruments:** Deadweights - Chandler Engineering Company, Serial No. 11325.  
Metserco 12" Pressure Recorders 0-3000 psi range.  
Metserco 12" Temperature Recorders 0-150 F. range.

Dead weight, pressure recorder and ambient temperature recorder were located inside the test trailer approximately 30' from the test header. The pressure recorder and deadweight were connected to the pipeline with a 1/4" hose.

The pipeline temperature probe was placed on the bottom of the buried pipe.

**Pressure Test: 11/01/06**

6:15 a.m. Arrived job and pressured up from 1475 psi.

6:25 a.m. Pressure at 1515 psi. Began test.

7:45 a.m. Pressure at 1512 psi.

11:15 a.m. Pressure at 1512 psi. Test complete. Bled pressure off of the line.

**Certification:**

This is to certify that all records, charts, logs, and discussions regarding the testing of the above line are true and correct and that in our opinion, the line was leak-free at the time of the test.

  
JOE DUNCAN  
TEST FOREMAN



### Hydrostatic Test for

Size, Type &amp; Description of Pipeline

Job No.

Test Pressure 15/5 max 15/2 min

### Fill Water Temperature

Date Test Started 11-1-06

Deadweight Brand      Chandler Engineering Company

Serial No.

## DEADWEIGHT AND RECORDER READINGS

REMARKS:

Inspector



# Mobile Analytical Laboratories, Inc.

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM

Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210

Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764

PHONE (432) 337-4744

FAX (432) 337-8781

NOVEMBER 14, 2005

MR. JOE DUNCAN  
CHOAT ENTERPRISES  
3300 SHERBROOK RD  
ODESSA, TEXAS 79762

DEAR MR. DUNCAN:

THE FOLLOWING ARE THE RESULTS OF THE TESTS ON THE CHANDLER  
DEAD WEIGHT GAUGE 50-3000 psi, SERIAL NUMBER 11325, RECEIVED  
11/02/05, LAB NO. 2204:

SIZE 1#  
5.4707

SIZE 2#  
11.1934  
11.0654

SIZE 5#  
27.8921

SIZE 10#  
A 55.7853  
B 55.7900  
C 55.7987  
D 55.7930

SIZE 50#  
279.01

SIZE 100#  
A 558.21  
B 558.20  
C 558.22  
D 558.19

SIZE 500#  
A 2788.20  
B 2788.15  
C 2790.75  
D 2788.40  
E 2790.40


PISTON & TABLE (50) 279.05

ALL WEIGHTS IN GRAMS - WEIGHTS - REFERENCE - NIST - L-5448.

WE HAVE CHECKED THE ABOVE EQUIPMENT AND FIND THAT IT MEETS THE  
QUALIFICATIONS AND STANDARDS AS CITED IN THE 4TH EDITION,  
NATIONAL BUREAU OF STANDARDS HANDBOOK 44, SCALE SECTION PAGES  
1-32.

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS.  
IF YOU HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION,  
PLEASE FEEL FREE TO CONTACT ME AT ANY TIME.

SINCERELY,

  
STEPHEN REID  
SR/md

# CHOAT ENTERPRISES, INC

1200 East 43rd  
Odessa, TX. 79762

## CERTIFICATION OF CALIBRATION

DESCRIPTION OF INSTRUMENT: 12" Pressure Recorder  
SERIAL NUMBER: 11471 PRESSURE RANGE: 0-3000

### TESTING CONDITIONS

ACCURACY: .50% + OR - 25 PSI POSITION: VERTICAL TEMPERATURE: 72F.

### INCREASING PRESSURE

APPLIED PRESSURE	INDICATED PRESSURE	DIFFERENCE
0	0	0
500	500	0
1000	1000	0
1500	1500	0
2000	2000	0
2500	2500	0
3000	3000	0

This is to certify that this instrument has been inspected and tested against Pressure Standard  
Chandler Deadweight Tester S/N 21474

SPECIAL CONDITIONS: None

DATE OF INSPECTION: 7-12-06

INSPECTOR: 

**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

Serial Number: 12374

Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

Actual Temperature

32F

75F

150F

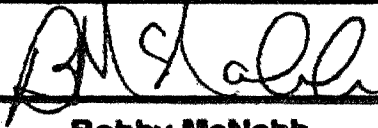
Recorder

32F

75F

150F

Comments: \_\_\_\_\_

Calibrated By:   
**Bobby McNabb**

Date 7-10-06

**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

Serial Number: 12375

Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

Actual Temperature

32F

75F

150F

Recorder

32F

75F

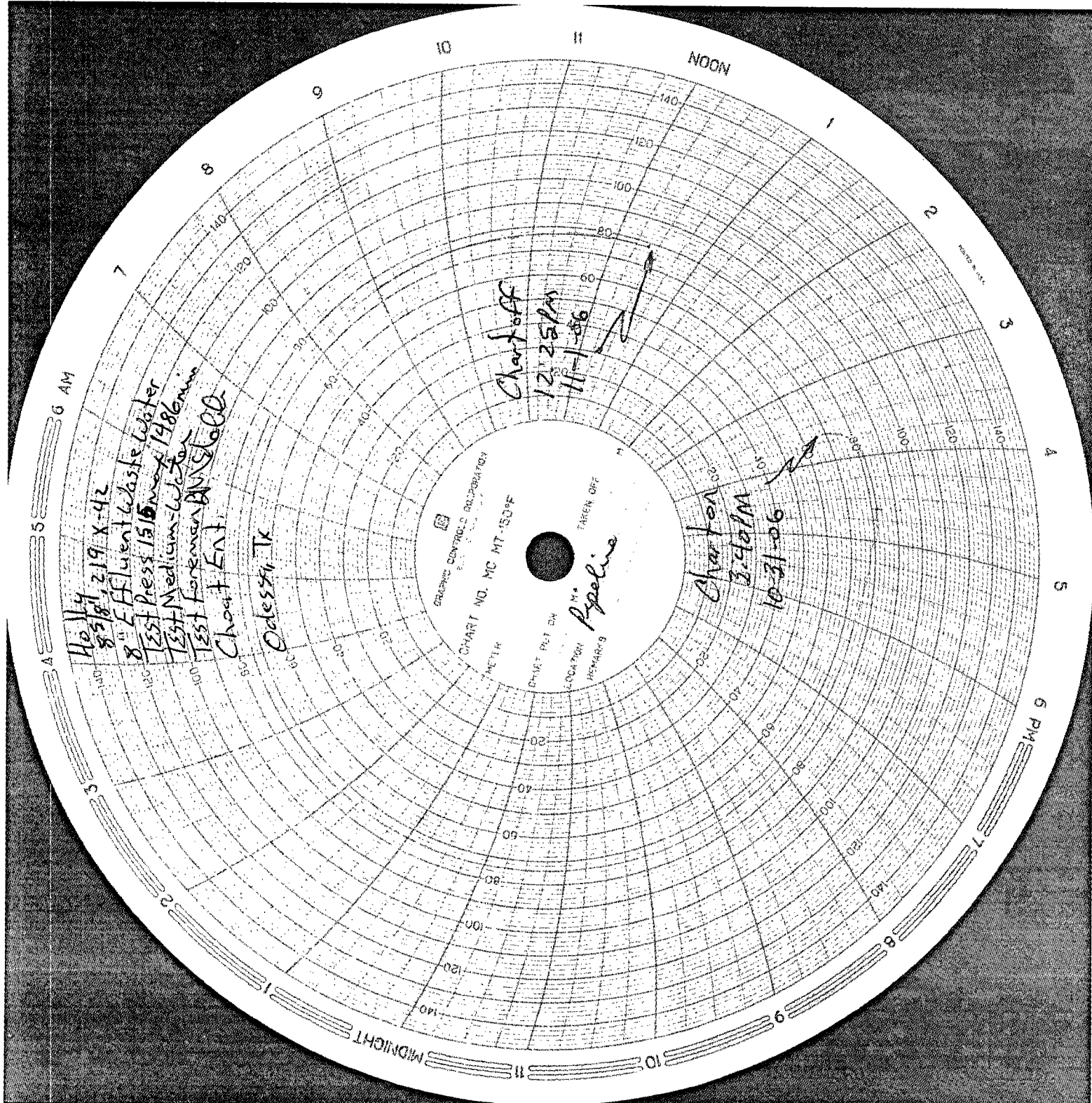
150F

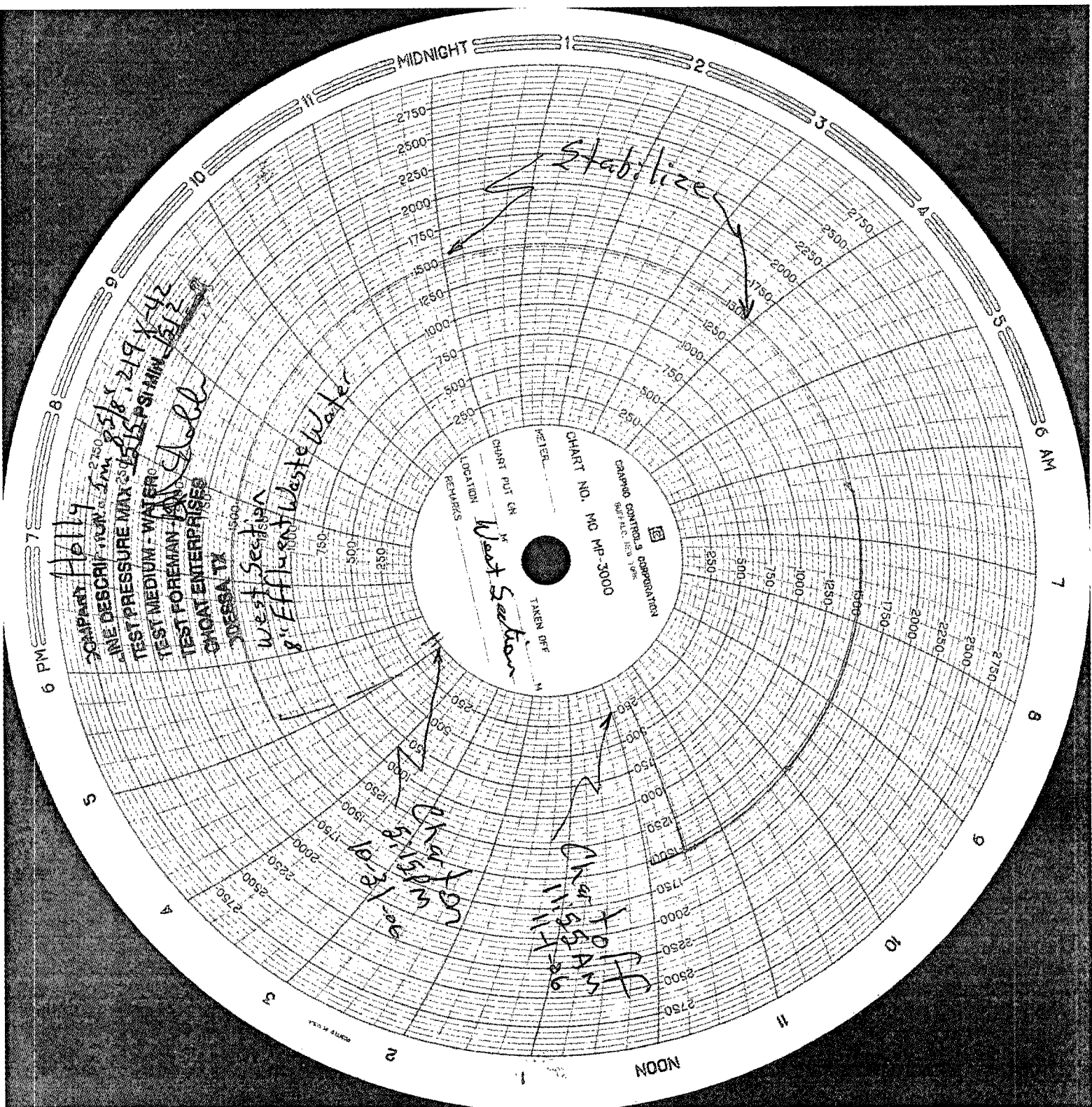
Comments: \_\_\_\_\_

Calibrated By: 

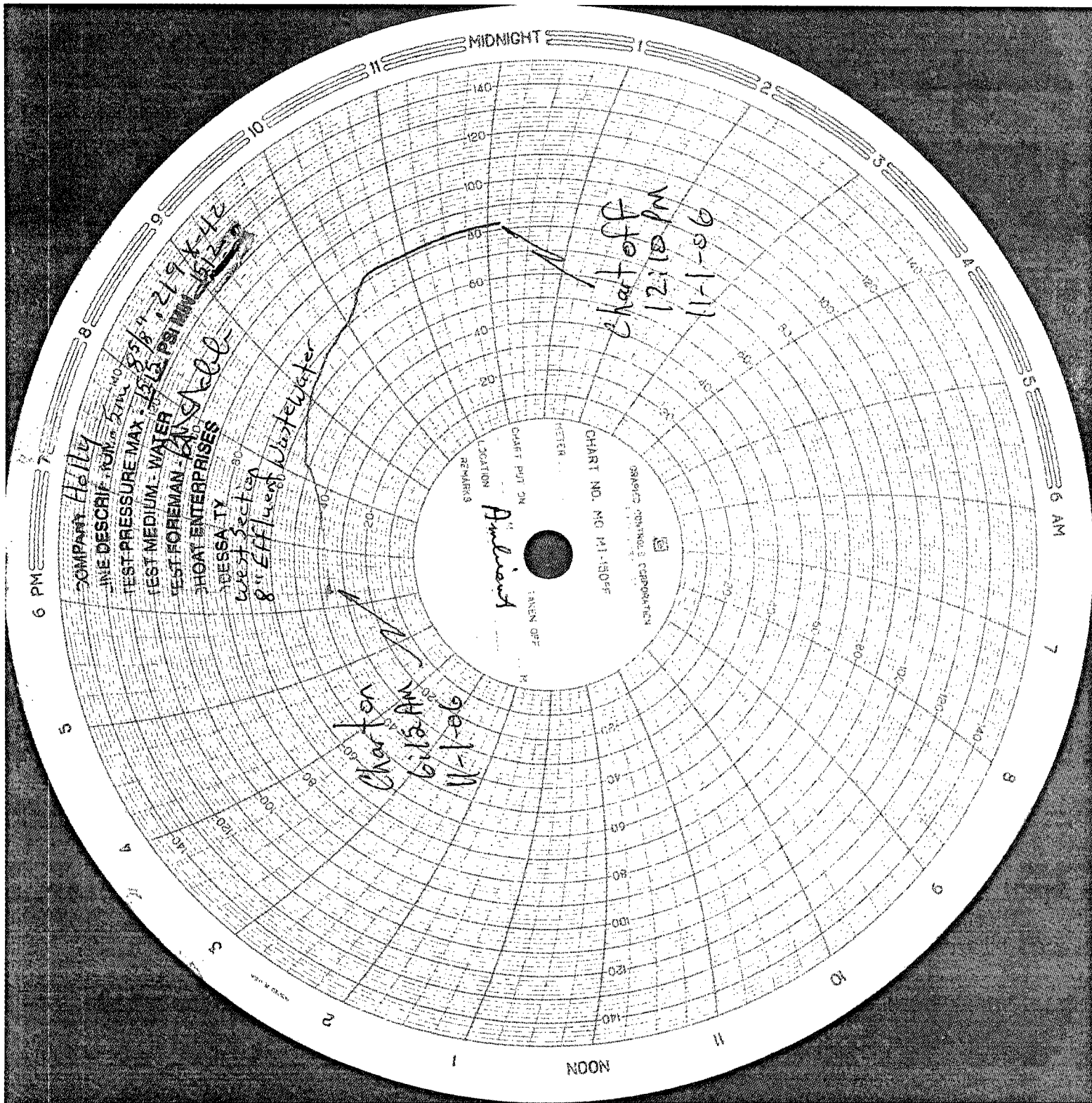
**Bobby McNabb**

Date 7-10-06











**HOLLY ENERGY PARTNERS  
HYDROSTATIC TEST REPORT**

**8,800' OF 8 5/8" .219 W.T. X-42 RIVER  
SECTION FOR THE 8" EFFLUENT  
WASTE WATER**

**D & D CONSTRUCTION  
CONTRACTOR**

**NOVEMBER 1, 2006**

**CHOAT ENTERPRISES, INC.  
PIPELINE TESTING  
3300 SHERBROOK, ODESSA TX 79762  
432-367-8459**

CHOAT ENTERPRISES  
PIPELINE TESTING  
3300 SHERBROOK  
ODESSA TX 79762  
432-367-8459

**TEST SUMMARY:**

**Objective:** To hydrostatic test 8,800' of 8 5/8" .219W.T. X-42 river section for the 8" Effluent Waste Water.

The line was covered.

**Personnel:** Choat Enterprises, Inc. Pipeline Testing was represented by Bobby McNabb. James Choat was Test Engineer.

**Equipment:** A Goulds Model 3316 two stage centrifugal pump powered by a Ford 460 cu. in. engine was used to fill the line. An F.W.I. triplex pressure pump Model 323 with a 1 3/8" bore and a 3 1/8" stroke displacing 0.054 gallons per revolution, (90% efficiency) powered by a Ford 460 cu. in. engine was used to pressure the line.

**Instruments:** Deadweights - Chandler Engineering Company, Serial No. 19504.  
Metserco 12" Pressure Recorders 0-3000 psi range.  
Metserco 12" Temperature Recorders 0-150 F. range.

Dead weight, pressure recorder and ambient temperature recorder were located inside the test trailer approximately 30' from the test header. The pressure recorder and deadweight were connected to the pipeline with a 1/4" hose.

The pipeline temperature probe was placed on the bottom of the buried pipe.

**Pressure Test: 11/1/06**

6:30 a.m. Arrived job and pressured up from 1450 psi.

6:45 a.m. Pressure at 1500 psi. Began test.

7:00 a.m. Pressure at 1499 psi.

12:20 p.m. Pressure at 1499 psi. Test complete. Bled pressure off of the line.

**Certification:**

This is to certify that all records, charts, logs, and discussions regarding the testing of the above line are true and correct and that in my opinion, the line was leak-free at the time of the test.



JOE DUNCAN  
TEST FOREMAN

Hydrostatic Test for Holley

Size, Type & Description of Pipeline 8800' 8" 21 1/2" X-42 for the  
8" Effluent Waste Water - River Section

Fill Water Temperature \_\_\_\_\_ Date Test Started 11-1-06

Deadweight Brand Chandler Engineering Company Serial No.                     

### DEADWEIGHT AND RECORDER READINGS

SINKWEIGHT AND RECORDED READINGS							
	Deadweight	Pipe	Amb.		Deadweight	Pipe	Amb.
<u>Time</u>	<u>Pressure</u>	<u>Temp.</u>	<u>Temp.</u>	<u>Time</u>	<u>Pressure</u>	<u>Temp.</u>	<u>Temp.</u>
6:15	1500	74	40				
6:30	1499	74	40				
6:45	1499	74	40				
7:00	1499	74	40				
7:15	1499	74	39				
7:30	1499	74	39				
7:45	1499	74	40				
8:00	1499	74	41				
8:15	1499	75	42				
8:30	1499	75	46				
8:45	1499	75	48				
9:00	1499	76	50				
9:15	1499	76	52				
9:30	1499	76	54				
9:45	1499	76	56				
10:00	1499	76	59				
10:15	1499	76	61				
10:30	1499	76	63				
10:45	1499	77	65				

REMARKS:

Inspector \_\_\_\_\_



# Mobile Analytical Laboratories, Inc.

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM

Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210

Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764

PHONE (432) 337-4744

FAX (432) 337-8781

MR. BOBBY MCNABB  
CHOAT ENTERPRISES  
3300 SHERBROOK RD  
ODESSA, TEXAS 79762

JULY 11, 2006

DEAR MR. MCNABB:

THE FOLLOWING ARE THE RESULTS OF THE TESTS ON THE CHANDLER  
DEAD WEIGHT TESTER 50-5000 psi, SERIAL NUMBER 19504, RECEIVED  
07/10/06 LAB NO. 1447:

<b>SIZE 1#</b>	<b>SIZE 2#</b>	<b>SIZE 5#</b>	<b>SIZE 10#</b>
5.4623	11.0730	27.6367	55.4771
	11.1067		55.4765
			55.4947
			55.4995

<b>SIZE 50#</b>	<b>SIZE 100#</b>	<b>SIZE 500#</b>
277.69	556.32	2787.50
	552.05	2787.00
	556.47	2782.70
	556.47	2788.40
		2788.20
		2787.70
		2788.05
		2784.00
		2788.30

PISTON & TABLE (50) 279.21

ALL WEIGHTS IN GRAMS - WEIGHTS - REFERENCE - L-5448.

WE HAVE CHECKED THE ABOVE EQUIPMENT AND FIND THAT IT MEETS THE  
QUALIFICATIONS AND STANDARDS AS CITED IN THE 4TH EDITION,  
NATIONAL BUREAU OF STANDARDS HANDBOOK 44, SCALE SECTION PAGES  
1-32.

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS.  
IF YOU HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION,  
PLEASE FEEL FREE TO CONTACT ME AT ANY TIME.

SINCERELY

STEPHEN REID  
SR/md

# CHOAT ENTERPRISES, INC

1200 East 43rd  
Odessa, TX. 79762

## CERTIFICATION OF CALIBRATION

DESCRIPTION OF INSTRUMENT: 12" Pressure Recorder  
SERIAL NUMBER: MFG 0955 PRESSURE RANGE: 0-3000

### TESTING CONDITIONS


ACCURACY: .50% + OR - 25 PSI POSITION: VERTICAL TEMPERATURE: 72F.

### INCREASING PRESSURE

APPLIED PRESSURE	INDICATED PRESSURE	DIFFERENCE
0	0	0
500	500	0
1000	1000	0
1500	1500	0
2000	2000	0
2500	2500	0
3000	3000	0

This is to certify that this instrument has been inspected and tested against Pressure Standard  
Chandler Deadweight Tester S/N 21474

SPECIAL CONDITIONS: None

DATE OF INSPECTION: 7-12-06 INSPECTOR: 

**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

Serial Number: 12374

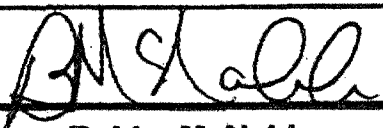
Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

Actual Temperature  
32F  
75F  
150F

Recorder  
32F  
75F  
150F

Comments: \_\_\_\_\_

Calibrated By:   
Bobby McNabb

Date 7-10-06

**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

Serial Number: 12375

Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

Actual Temperature

32F

75F

150F

Recorder

32F

75F

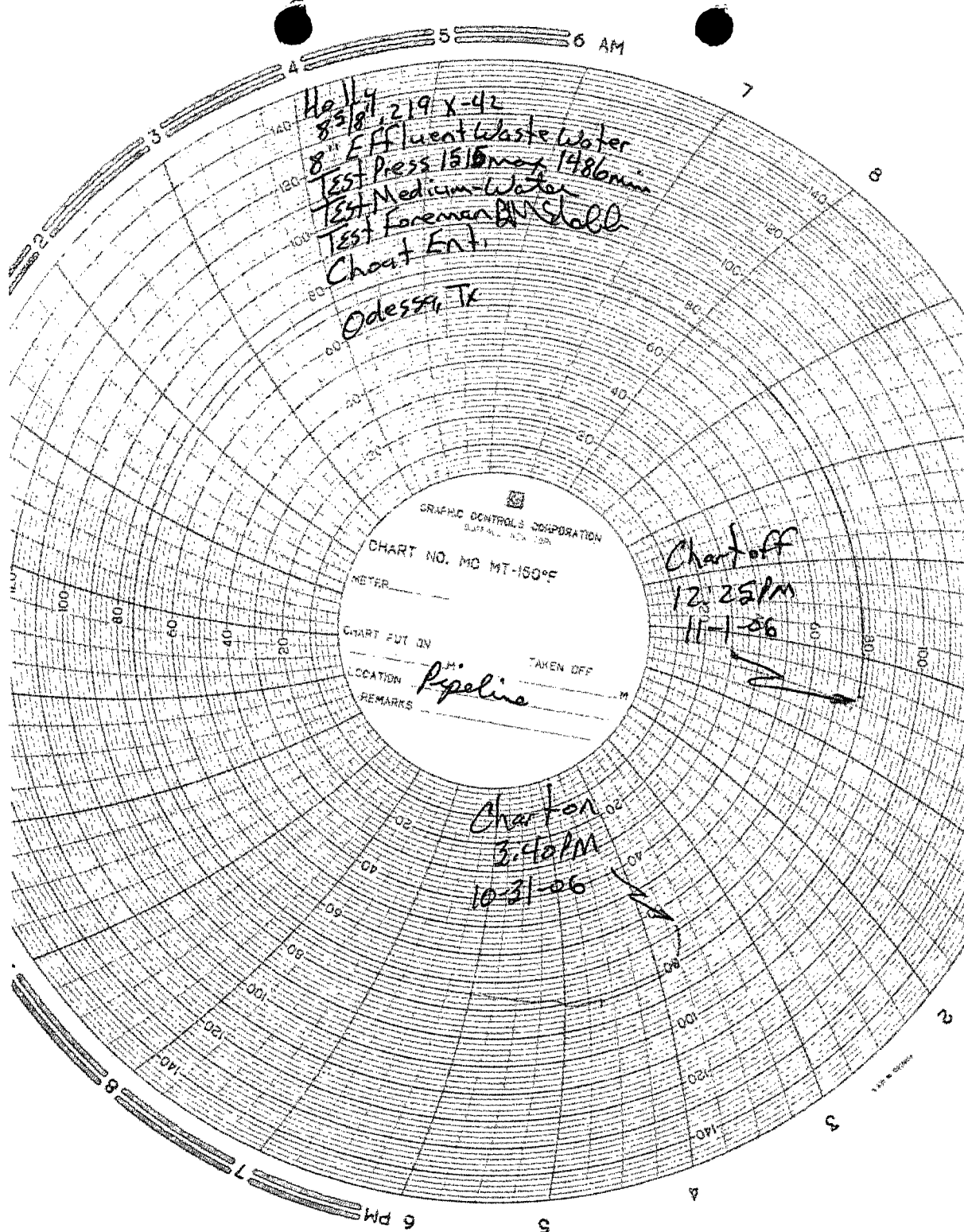
150F

Comments: \_\_\_\_\_

Calibrated By: \_\_\_\_\_

  
**Bobby McNabb**

Date 7-10-06



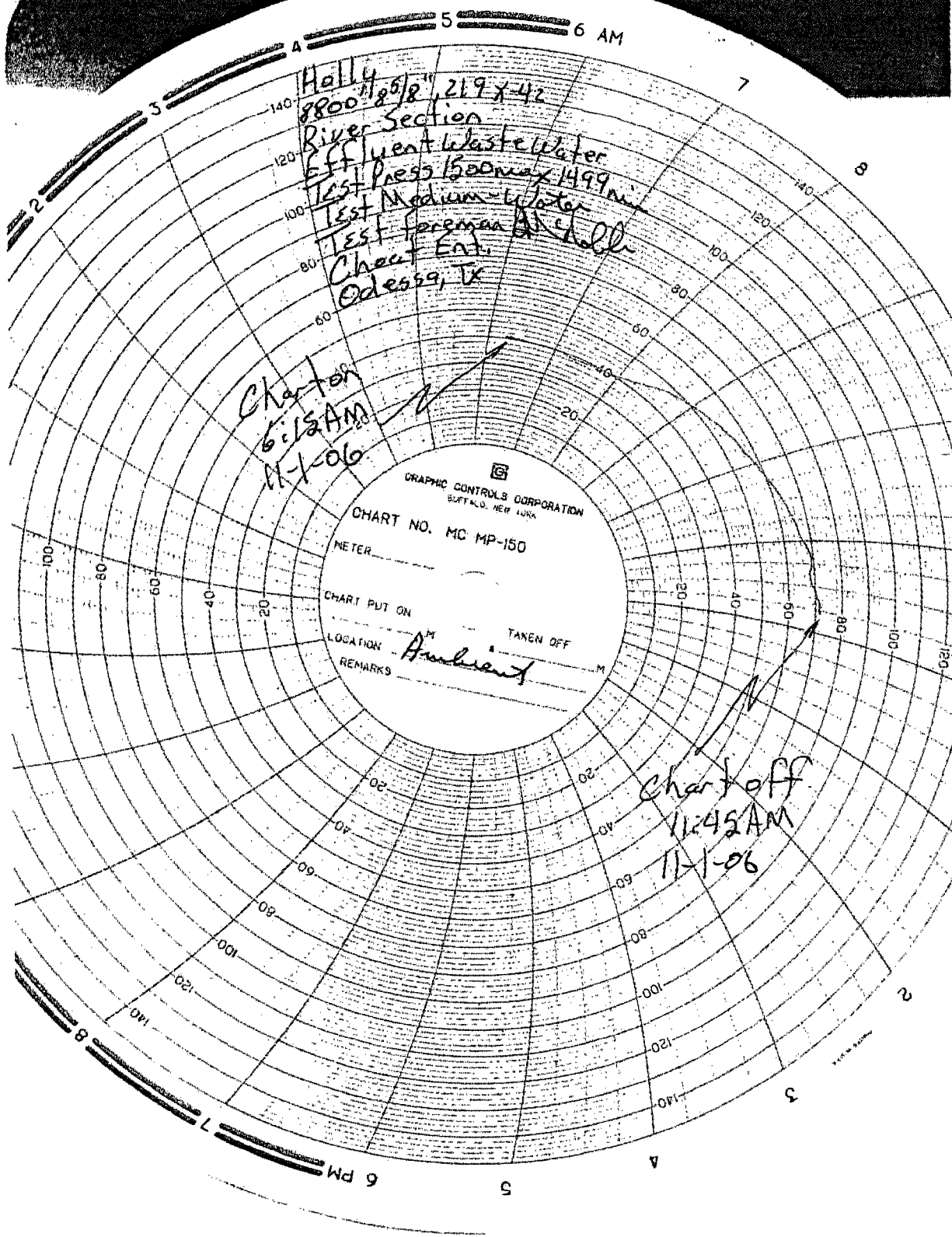
Well 4  
8 3/8" 219 X 42  
8" Effluent Waste Water  
Test Press 1515 max 1486 min  
Test Medium Water  
Test Foreman BNS Stable  
Chart Ent.  
Odessa, Tx

Chart off  
12:25 PM  
11-1-06

Chart on  
3:40 PM  
10-31-06

GRAPHIC CONTROLS CORPORATION  
CHART NO. MC MT-150°F  
METER  
CHART PUT IN  
LOCATION Pipeline  
REMARKS  
TAKEN OFF



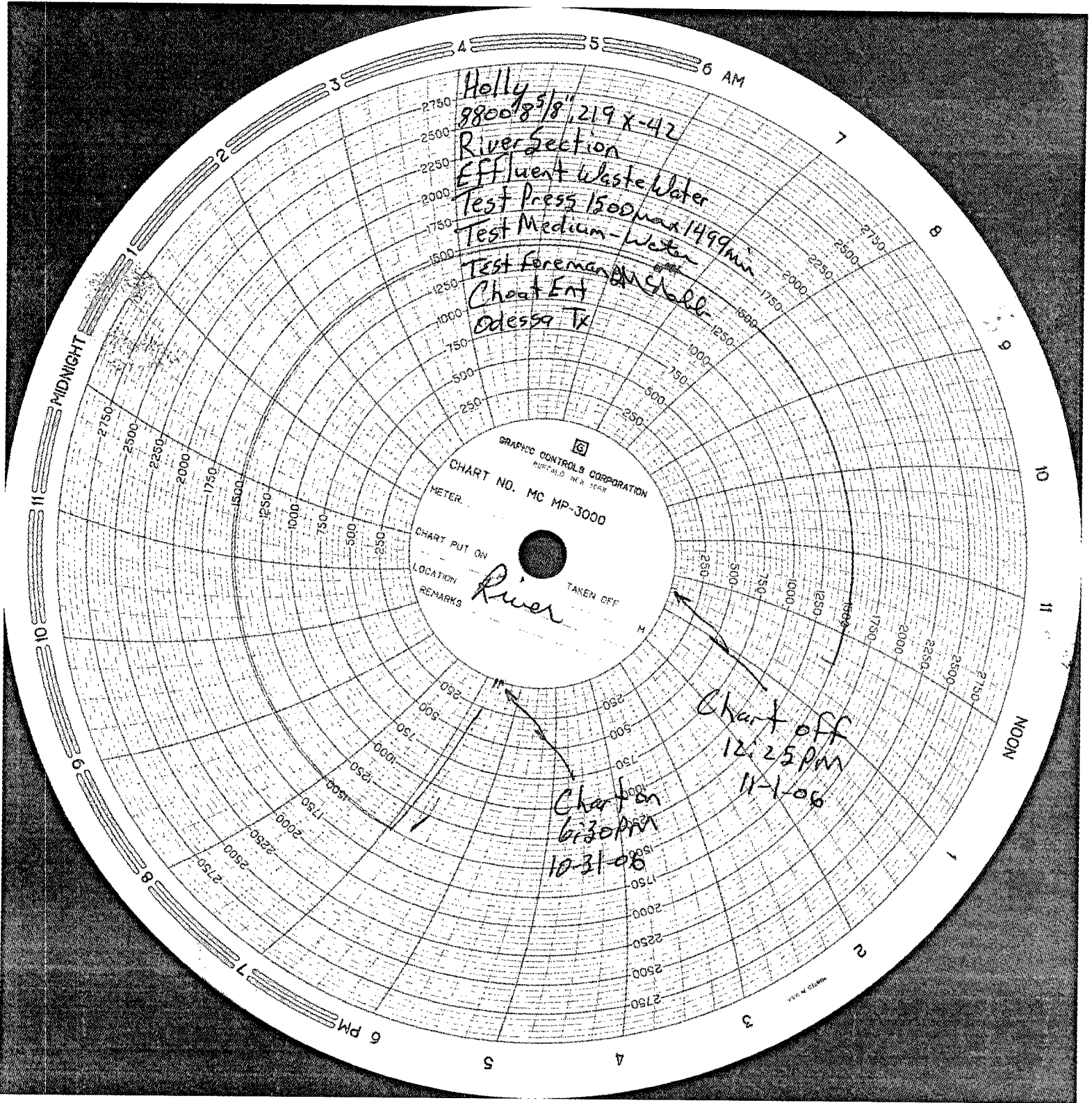


Holly 8800 1 8 1/2 219 x 42  
River Section  
Effluent Wastewater  
Test Press Boom 1499  
Test Medium Water  
Test Foreman A. Hall  
Chart Ent. Odessa, TX

Chart on  
6:15 AM  
11-1-06

Chart off  
11:45 AM  
11-1-06

GRAPHIC CONTROLS CORPORATION  
BUFFALO, NEW YORK  
CHART NO. MC MP-150  
METER  
CHART PUT ON  
LOCATION  
TAKEN OFF  
REMARKS



**HOLLY ENERGY PARTNERS  
HYDROSTATIC TEST REPORT**

**34,000' OF 8 5/8" .219 W.T. X-42 EAST  
SECTION FOR THE 8" EFFLUENT  
WASTE WATER**

**D & D CONSTRUCTION  
CONTRACTOR**

**NOVEMBER 1, 2006**

**CHOAT ENTERPRISES, INC.  
PIPELINE TESTING  
3300 SHERBROOK, ODESSA TX 79762  
432-367-8459**

CHOAT ENTERPRISES  
PIPELINE TESTING  
3300 SHERBROOK  
ODESSA TX 79762  
432-367-8459

**TEST SUMMARY:**

**Objective:** To hydrostatic test 34,000' of 8 5/8" .219 W.T. X-42 East Section for the 8" Effluent Waste Water.

The line was covered.

**Personnel:** Choat Enterprises, Inc. Pipeline Testing, was represented by Bobby McNabb. James Choat was Test Engineer.

**Equipment:** A Goulds Model 3316 two stage centrifugal pump powered by a Ford 460 cu. in. engine was used to fill the line. An F.W.I. triplex pressure pump Model 323 with a 1 3/8" bore and a 3 1/8" stroke displacing 0.054 gallons per revolution, (90% efficiency) powered by a Ford 460 cu. in. engine was used to pressure the line.

Water was hauled to the job site by Holly Energy.

**Instruments:** Deadweights - Chandler Engineering Company, Serial No. 21474.  
Metserco 12" Pressure Recorders 0-3000 psi range.  
Metserco 12" Temperature Recorders 0-150 F. range.

Dead weight, pressure recorder and ambient temperature recorder were located inside the test trailer approximately 30' from the test header. The pressure recorder and deadweight were connected to the pipeline with a 1/4" hose.

The pipeline temperature probe was placed on the bottom of the buried pipe.

**Pressure Test: 11/01/06**

6:30 a.m. Arrived job and pressured up from 1400 psi.

6:40 a.m. Pressure at 1500 psi. Began test.

10:45 a.m. Pressure at 1486 psi. Test complete. Bled pressure off of the line.

**Certification:**

This is to certify that all records, charts, logs, and discussions regarding the testing of the above line are true and correct and that in our opinion, the line was leak-free at the time of the test.



JOE DUNCAN  
TEST FOREMAN

### Hydrostatic Test for

Job No. \_\_\_\_\_ Test Pressure 500 max 1486 min

Fill Water Temperature \_\_\_\_\_ Date Test Started 11-1-06

Deadweight Brand    Chandler Engineering Company    Serial No. \_\_\_\_\_

### DEADWEIGHT AND RECORDER READINGS

REMARKS:

Inspector



*Mobile Analytical Laboratories, Inc.*

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM

Billing Address: P.O. BOX 89210 • ODESSA, TEXAS 79769-0210

Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79784

PHONE (432) 337-4744

FAX (432) 337-8781

MR. BOBBY MCNABB  
CHOAT ENTERPRISES  
3300 SHERBROOK RD  
ODESSA, TEXAS 79762

JULY 31, 2006

DEAR MR. MCNABB:

THE FOLLOWING ARE THE RESULTS OF THE TESTS ON THE CHANDLER DEAD  
WEIGHT GAUGE (3 PIECE) 50-10,000 psi, SERIAL NUMBER 21474  
RECEIVED 07/10/06, LAB NO. 1448:

SIZE 1#	SIZE 2#	SIZE 5#	SIZE 10#
5.5229	11.0490	27.6605	A 55.4956
	11.1453		B 55.4724
			C 55.4919
			D 55.5034
SIZE 50#	SIZE 100#	SIZE 500#	SIZE 1000#
277.90	A 556.53	2786.85	A 5577.8
	B 556.78		B 5578.0
	C 556.59		C 5578.1
	D 556.59		D 5578.3
			E 5577.5
			F 5577.5
			G 5579.3
			H 5578.6
			I 5579.4

PISTON & TABLE (50) 278.73

ALL WEIGHTS IN GRAMS - WEIGHTS - REFERENCE - NIST L-5448.

WE HAVE CHECKED THE ABOVE EQUIPMENT AND FIND THAT IT MEETS THE  
QUALIFICATIONS AND STANDARDS AS CITED IN THE 4TH EDITION,  
NATIONAL BUREAU OF STANDARDS HANDBOOK 44, SCALE SECTION PAGES  
1-32.

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS.  
IF YOU HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION,  
PLEASE FEEL FREE TO CONTACT ME AT ANY TIME.

SINCERELY,

STEPHEN REID  
SR/md

P.O. BOX 15061  
ODESSA, TEXAS 79768  
(432) 550-4899

GREG BINGHAM  
OWNER

**MEASUREMENT TESTING SERVICE**  
**CERTIFICATION OF CALIBRATION**

CUSTOMER: CHOAT ENTERPRISES

ADDRESS: ODESSA, TEXAS

P.O. NUMBER:

INSTRUMENT TESTED: BARTON 12" PRESSURE RECORDER

SERIAL NUMBER: 11299 PRESS. RANGE: 0-3000 TEMP. RANGE: N/A

**TESTING CONDITIONS**

ACCURACY: .50% + OR - 15 PSI

POSITION: VERTICAL

TEMP. 78F.

<b><u>INCREASING PRESSURE</u></b>		
<b>APPLIED PRESSURE</b>	<b>INDICATED PRESSURE</b>	<b>DIFFERENCE</b>
0	0	0
300	300	0
600	600	0
900	900	0
1200	1200	0
1500	1500	0
1800	1800	0
2100	2100	0
2400	2400	0
2700	2700	0
3000	3000	0

This is to certify that this instrument has been inspected and tested against Pressure Standard Chandler Deadweight Tester S/N: 4740, Crystal S/N: 2362905004 traceable to the National Bureau of Standards, traceability reference available upon request compensated to local acceleration due to gravity.

SPECIAL CONDITIONS:

DATE OF INSPECTION: 7-11-06

INSPECTOR:

*Greg Bingham*

**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

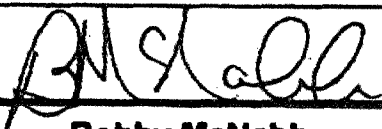
Serial Number: 12374 Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

Actual Temperature  
32F  
75F  
150F

Recorder  
32F  
75F  
150F

Comments: \_\_\_\_\_

Calibrated By:   
**Bobby McNabb**

Date 7-10-06



**CHOAT ENTERPRISES, INC**  
3300 Sherbrook  
Odessa, TX. 79762

Description of Instrument: 12" Temperature Recorder

Serial Number: 12375

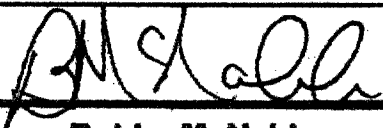
Temp. Range: 0-150F

**CERTIFICATION OF CALIBRATION**

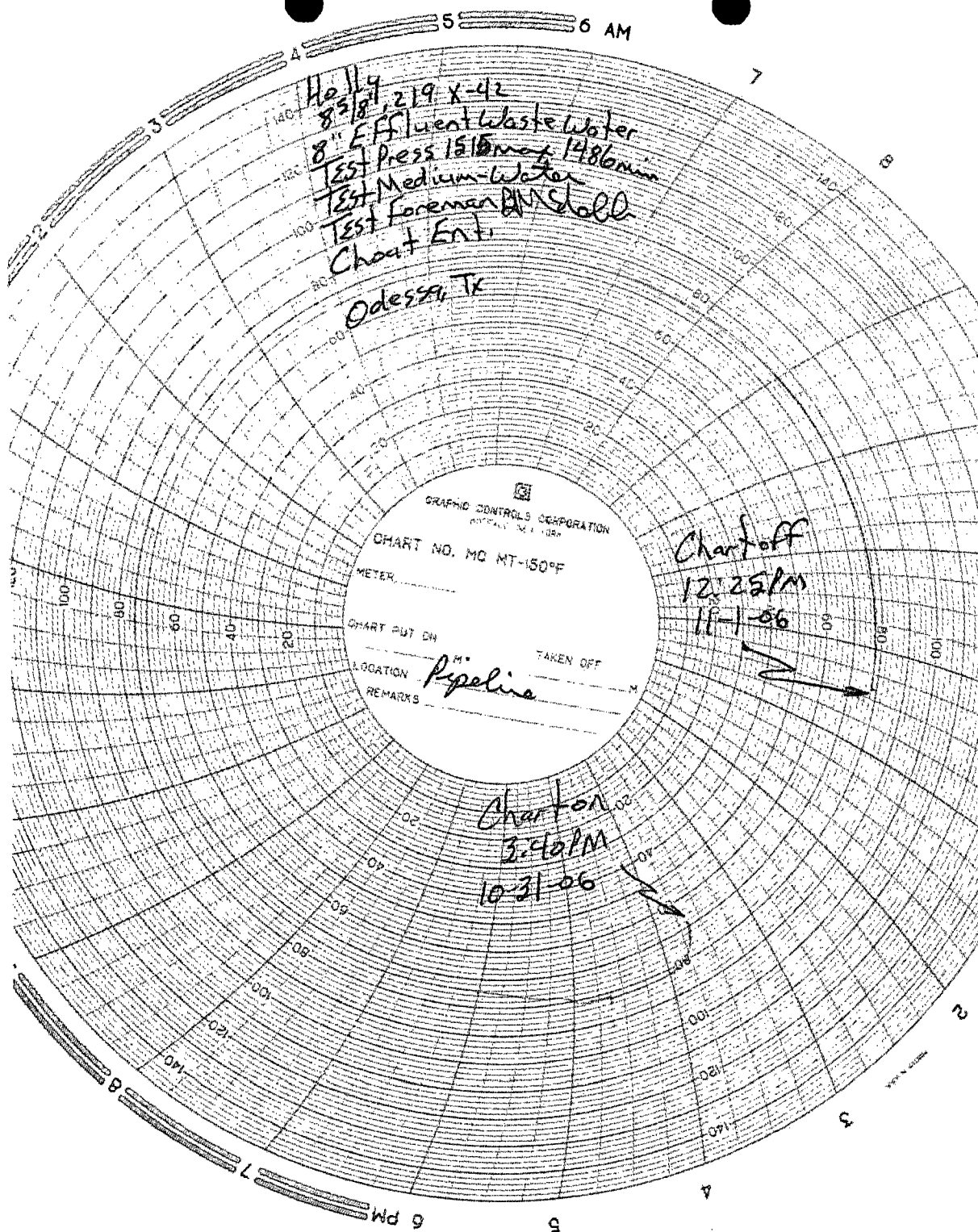
Actual Temperature  
32F  
75F  
150F

Recorder  
32F  
75F  
150F

Comments: \_\_\_\_\_

Calibrated By:   
**Bobby McNabb**

Date: 7-10-06



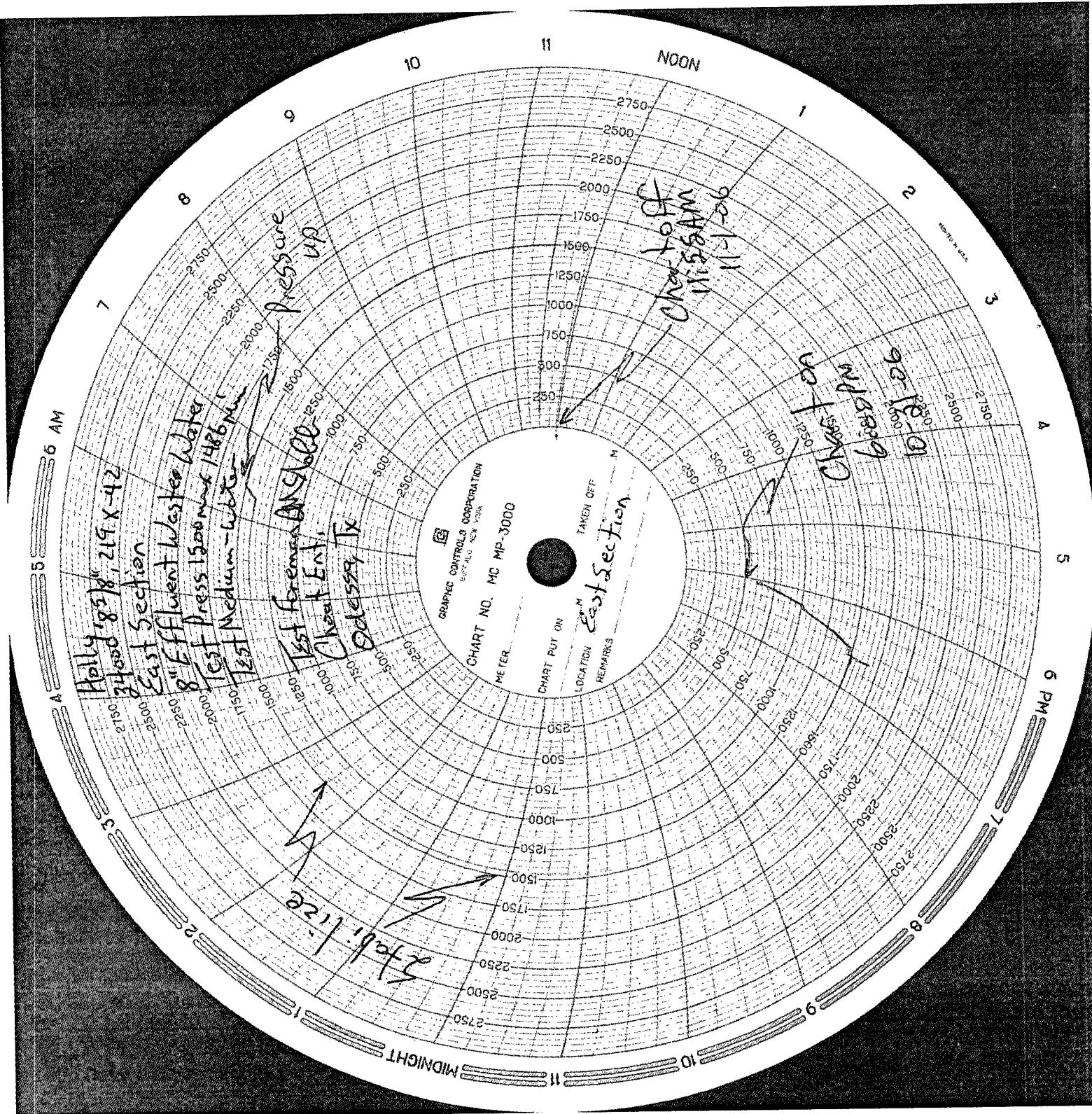
Holly  
8/21/81, 219 X-42  
8" Effluent Waste Water  
Test Press 1515 max 1486 min  
Test Medium-Water  
Test Foreman BMS Hall  
Chart Ent.

Odessa, Tx

GRAPHIC CONTROLS CORPORATION  
PATENTED 1961-1964  
CHART NO. MC MT-150°F  
METER \_\_\_\_\_  
CHART PUT ON \_\_\_\_\_  
LOCATION Pipeline TAKEN OFF \_\_\_\_\_  
REMARKS \_\_\_\_\_

Chart off  
12:25 PM  
11-1-86

Chart on  
3:40 PM  
10-31-86



Holly 858  
24450  
East Section

8" Effluent Western Water  
Test Press 1500 min 1486 min  
Test Medium-Water

Test for men ANS 600-  
Chart 1 Ent.  
Odessa, TX

Pressure  
up

Chart to off  
11:55 AM  
11-1-26

Chart on  
6:00 PM  
11-1-26

24450  
11:55 AM

GRAPHIC CONTROLS CORPORATION  
CHART NO. MC MP-3000

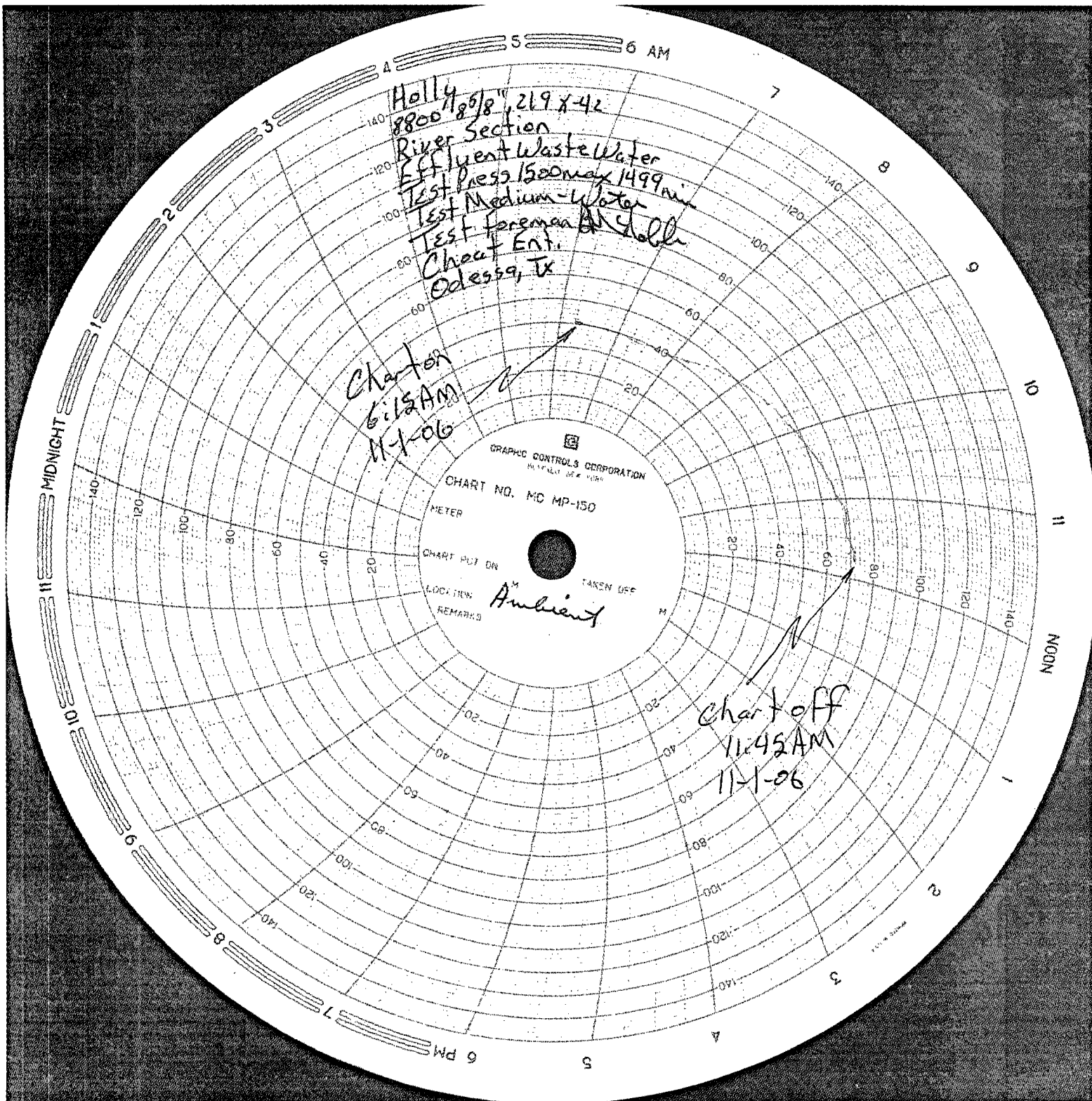
CHART PUT ON  
LOCATION  
REMARKS  
East Section

MIDNIGHT

NOON

6 PM

6 AM



**Chavez, Carl J, EMNRD**

---

**From:** Price, Wayne, EMNRD  
**Sent:** Thursday, December 21, 2006 7:59 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** FW: NRC-06-003b 12-18-2006 Approval w-Mods 3-Mile Ditch WP.pdf

---

**From:** Kieling, John, NMENV  
**Sent:** Monday, December 18, 2006 2:23 PM  
**To:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; King.Laurie@epamail.epa.gov; Frischkorn, Cheryl, NMENV  
**Subject:** NRC-06-003b 12-18-2006 Approval w-Mods 3-Mile Ditch WP.pdf

This is in todays mail.  
If you have any questions please contact Hope Monzeglio.  
Thanks

12/21/2006



BILL RICHARDSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Telephone (505) 476-6000

Fax (505) 476-6030  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RON CURRY  
SECRETARY

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

December 18, 2006

Darrell Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88211-0159

**RE: APPROVAL WITH MODIFICATIONS**  
**THREE-MILE DITCH CORRECTIVE ACTION INVESTIGATION WORKPLAN**  
**NAVAJO REFINING COMPANY, ARTESIA REFINERY**  
**HWB-NRC-06-003b**  
**EPA ID #: NMDO48918817**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) is in receipt of Navajo Refining Company's (Permittee) report titled *Three-Mile Ditch Corrective Action Investigation Workplan* (Work Plan), dated October 27, 2006. The Work Plan outlines proposed additional investigation and remedial activities that include contaminated soil removal for Three Mile Ditch (TMD). NMED hereby approves the Work Plan with the conditions outlined below.

Upon completion of the investigation and remedial activities at Three Mile Ditch, the Permittee must submit an Investigation Report that summarizes the work performed under the approved Work Plan. After NMED has reviewed the Investigation Report, NMED will determine if corrective measures are necessary.

The Permittee must implement the investigation and remedial activities within 90 days of receipt of this letter. The Permittee must submit an Investigation Report to NMED within 240 days of commencing field activities. The Permittee must adhere to all conditions set forth in this letter.

**Comment 1**

The Permittee states on page 6, paragraph 4 in Section 3.0 (Background), "[d]uring the third and fourth quarter of 2003, more than one-hundred soil borings were drilled along TMD and the Evaporation Pond Areas as part of a Corrective Measures Study."

Darrell Moore  
Navajo Refining Company  
December 18, 2006  
Page 2

The investigations that occurred along TMD and the Evaporation Pond areas in 2003 were part of a RCRA Facility Investigation. A remedy has not been proposed or selected for these areas. The previous and ongoing investigations will determine if a Corrective Measures Study is needed.

**Comment 2**

The Permittee states on page 7, paragraph 1 of Section 3.0 (Background) that "[s]ome groundwater monitoring wells directly adjacent and downgradient from the ponds indicated the presence of benzene and arsenic. However, Navajo owns the property above the suspected plume, and the groundwater is not used for any purpose."

Ownership of land does not relieve the Permittee of the responsibility to comply with all applicable regulations. The comment further states the groundwater is currently not used. The state of New Mexico considers all groundwater with total dissolved solids (TDS) concentrations less than 10,000 mg/L to be a resource subject to regulation. This issue was previously addressed in the September 14, 2005 Notice of Deficiency from NMED to the Permittee regarding the Three Mile Ditch and Evaporation Ponds Corrective Action Investigation Report.

**Comment 3**

The Permittee states on page 12 of Section 6.3 (TMD-33 to TMD-38 Area Investigation) that "[t]he samples will be collected from the surface and on two-foot intervals thereafter. Samples exhibiting high PID readings will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) and arsenic. The borings will be advanced to a depth that no visible or field instrument reading can detect contamination."

Using a PID [photo ionization detector] to determine which samples will be submitted for laboratory analysis is inappropriate because the contamination is likely to be primarily heavier petroleum hydrocarbons and metals that will not be detected with a PID. Therefore, along with PID readings, the Permittee must also submit samples that exhibit the greatest evidence of petroleum contamination based on visual and other observations for laboratory analysis. The TPH analysis must include diesel and oil range organics (DRO extended). The Permittee must determine the vertical extent of contamination.

**Comment 4**

The Permittee addresses the collection of confirmation samples from the most contaminated soils removed from the excavated areas; however, the Work Plan does not address the collection of confirmation samples within the excavated areas to demonstrate that all contaminated soils have been removed. The Permittee must collect a representative number of confirmation samples from the sidewalls and bottom of the excavations to demonstrate that soils containing contaminant concentrations greater than the applicable clean up levels have been removed.

Darrell Moore  
Navajo Refining Company  
December 18, 2006  
Page 3

**Comment 5**

The Permittee states on page 21, paragraph 3 of Appendix D (Investigation Derived Waste) that "[b]ased on the results of the sample analysis the water will either be disposed at an approved water disposal facility, used as process water at the refinery or will be emptied on-site" and analyzed for volatile organic compounds (VOCs) and semi volatile organic compounds (SVOCs).

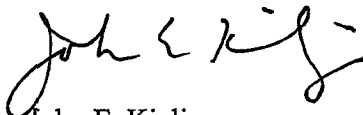
The Permittee can only discharge the water generated during sampling on-site if it is demonstrated to NMED, using laboratory analysis, that the water meets all applicable cleanup standards prior to discharge.

**Comment 6**

The Permittee has revised their Area Map of the facility (revision 11/3/05). The Area Map has renamed monitoring wells MW-28 and MW-29 as MW-68 and MW-71, respectively. These changes and other well name changes do not appear in Figure 2 of the Work Plan. Future documents must use the most updated facility map and well designations.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at 505-476-6045.

Sincerely,

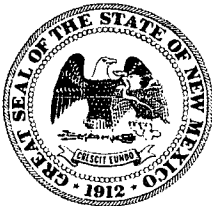


John E. Kieling  
Program Manager  
Permits Management Program  
Hazardous Waste Bureau

JEK/hm

cc: D. Cobrain, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
D. Whaley, NRC  
S. Hall, ARCADIS  
File: Reading and NRC 2006  
HWB-NRC-06-003b





BILL RICHARDSON  
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State of New Mexico  
**ENVIRONMENT DEPARTMENT**

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EPA ID #: NMDO48918817**

2007 JAN 3 PM 3 28

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Darrell Moore  
Navajo Refining Company  
December 18, 2006  
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Darrell Moore  
Navajo Refining Company  
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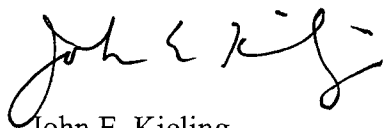
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Sincerely,



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

JEK/hm

cc: D. Cobrain, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
D. Whaley, NRC  
S. Hall, ARCADIS  
File: Reading and NRC 2006  
HWB-NRC-06-003b



# REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

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(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

November 3, 2006

Mr. Carl J. Chavez, CHMM  
Environmental Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RECEIVED

NOV 03 2006

Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

**RE: Binder with Boring Logs**

Carl,

*See Borahole Lithologic Data Subsurface Hydrocarbon Investigation  
1991-1997 (Sept 1997)*

Enclosed, please find a map showing the location of the borings that are in the three ring binder I gave you when you were here for the hydrotest. When we made copies of those boring logs, the map was left out.

Sincerely,  
NAVAJO REFINING COMPANY, LLC

*Darrell Moore*

Darrell Moore  
Environmental Manager for Water and Waste

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, November 03, 2006 12:08 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD  
**Subject:** Navajo Artesia Effluent Line Mechanical Integrity Test Procedure

Darrell:

Wayne just reminded me. We need to review your MIT procedure for the effluent line. It should include the source of the volume of fluid used during the test and fluid treatment, storage and/or disposal after the test. Please get this to me within the next 2 weeks. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, November 03, 2006 9:12 AM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD; Lowe, Leonard, EMNRD  
**Subject:** Navajo Artesia Effluent Line Hydrostatic Test November 1, 2006

Darrell:

Good morning. Congratulations, Navajo has passed this years Effluent Line Hydrostatic Test (HST). I am writing to follow-up on the HST that was conducted on November 1, 2006. The OCD arrived around 10:30 a.m. to witness the four hour HST from start to finish; however, Navajo- Artesia had already started the HST around 6:30 a.m. Navajo had filled the pipeline with fire water from the refinery and allowed to stabilized overnight from around 6 p.m to 6 a.m. the following morning before the start of the test. It appeared based on the chart recorders that Navajo- Artesia was able to maintain 1500 psi +/- 1% on the effluent pipeline for at least 4 hours; consequently, Navajo has passed this years HST.

Some items for clarification related to the HST are provided below.

- 1) Please provide the OCD with the date +/- 30 days that it prefers to conduct the annual effluent line HST. We presume that Navajo will select a time during the season when ambient ground, water supply and pipeline temperatures display similar temperatures to avoid significant temperature differentials during the test.
- 2) Navajo must work with the OCD to establish a date and time for future HST where OCD can be witness the 4 hour HST from start to finish. We were unable to accomplish this during this years test. The OCD needs at least 72 business hours to be available to witness the HST from start to finish.
- 3) Please provide the HST information, i.e., report, charts, calibration records, etc. from the November 1, 2006 to the OCD within 30 days from the date of the test. Please contact the OCD if an extension is needed. The report should indicate how the fluid in the pipeline is recycled, stored or disposed. The OCD does not want Navajo to discharge the fluid onto the ground during or after the test. Please contact the OCD if an extension is needed.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/oed/>  
(Pollution Prevention Guidance is under "Publications")

**Chavez, Carl J, EMNRD**

---

**To:** Moore, Darrell  
**Cc:** Gum, Tim, EMNRD; Price, Wayne, EMNRD; Lowe, Leonard, EMNRD  
**Subject:** Navajo- Artesia Effluent Line Hydrostatic Test Nov. 1, 2006

Darrell:

We will be in the Artesia area after 11:30 a.m. on Wednesday, Nov. 1, 2006. My cell number will be (505) 795-1222. We will want to drive to all test locations where pressure, temp. gauges are installed for the test and will be particularly interested in the section of pipe underneath the river at the start and end of the 4 hour hydrostatic test at 1500 psi with 1% allowable variation.

According to my notes from September 13, 2006, the water temp was about 120F and ground temp was about 68F. You are planning to use ground water at about 60F for this test, which is near the ground temperature. A temp. meter should document fluid temp. in the pipe relative to ground temp during the test.

The OCD noticed that the owner of the test meters had no calibration sheet(s) available for the meters used in the test last time. All meters should be tagged with the calibration date corresponding to the calibration sheet. Let me know the time that we need to be on site. Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
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10/27/2006



## REFINING COMPANY, L.P.

FAX

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(505) 746-5480 PIPELINE

October 31, 2006

Mr. Carl J. Chavez, CHMM  
Environmental Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

**Subject: Update Report on Status of Hydrocarbon Investigation Required as a Condition of Discharge Plan Renewal, GW-028, Artesia Refinery**

This letter report provides the OCD with information on progress of the above investigation as outlined in our letter of July 25, 2006 and your e-mail of August 14, 2006. Some of the required information listed in that e-mail has been submitted to the Division. This letter report responds to and provides information on the status of other elements of the investigation together with work that is scheduled for November 2006 and later.

- Item ii. Investigation work between MW-52 and KWB-2R and between the midpoint and KWB-4. A boring was advanced to a depth of 45 ft. at the location shown in Figure 1. Borehole samples and cuttings had hydrocarbon staining and odor mainly from a depth of 20 to 30 ft., but no hydrocarbon product was detected. Soil samples were collected that show minimal impact from 33 to 34 ft. and none at 45 ft. (Table 1). The boring was not completed as a recovery well and was plugged with bentonite (hydrated)\*.
- Item iv. To determine whether product is moving beneath the recovery trench in the area along Bolton Road immediately north of highway 82, Navajo was prepared to begin investigation of the area on the east side of Bolton Road and had staked borehole locations on October 11 and performed One-call notification. However, construction of a warehouse and yard by Chase Farms was underway at the site and heavy equipment was located and moving over the drilling locations. After discussions with Chase, it was determined that most of their heavy equipment will have completed work by mid-November so borehole investigation will recommence at that time.

---

\* Due to a software failure on Monday evening (10/30) printing of existing and new borehole logs was not possible for inclusion in this report. They will be provided as soon as the program is up and running again which will very likely be tomorrow (Wednesday, 11/01) or Thursday.



Regarding investigation in the Chase Farms pecan orchard, as mentioned in the Navajo July 25, 2006 letter, presence of heavy equipment in the orchard to install a trench is very unlikely given the existence of mature trees. During our recent groundwater sampling event we could not get equipment in to sample the wells and they were hand bailed. There is a slim possibility that Navajo may be allowed to drill investigatory borings and complete additional wells following the harvest season and during the dormant period when the trees are trimmed so as to maximize pecan production the following season. Navajo will approach Mr. Chase regarding that possibility, but additional work before the harvest is completed is not a possibility.

- Item v. OCD suggests that Navajo drill a well in the farmer's field to detect hydrocarbons. The field is an active agricultural farm; Navajo has lost wells in similar areas (e.g. KWB-2A and 2B) due to crop rotation and routine farm activities. We also have monitor wells downgradient from the field to detect any migration to that area.

Beginning in 1991, Navajo investigated and documented the presence of hydrocarbons in the area emanating from the refinery and installed the trenches along Bolton Road to capture such hydrocarbons. There is no evidence that any hydrocarbons are the result of any cause (e.g. pipeline leak) other than migration from the refinery.

We are including a large volume of material including maps and borehole logs showing the locations drilled and the resultant presence or absence of petroleum hydrocarbons. The migration of the hydrocarbons has been documented (in reports to the US EPA and NMED) as being due to the existence of near-surface buried braided stream channels of high permeability material surrounded by very low permeability clays and clayey silts. The channels are a result of stream flow and movement of clastic material in the Eagle Draw drainage, which begins in the Sacramento foothills to the west of Artesia.

There is no surface expression of these channels, which are characterized by sands and gravels ranging from less than one inch to rounded limestone cobbles several inches in diameter. The channels are random in both vertical and horizontal directions. Gravel found in a borehole at a depth of 20 to 25 ft. may not be present in a borehole 25 to 30 ft. away. Further complicating the lithology is the presence of caliche at various depths, usually associated with clay, which provides for some saturation in fracture zones but little permeability.

Because tracing individual channels, which change direction and lithology with distance, is very difficult, trenches were installed along Bolton Road perpendicular to the direction of groundwater flow to capture hydrocarbons by allowing them to move to permeable gravel beds installed in the trenches where

they could be recovered using skimmer pumps. Lower water tables and limitations on excavation using surface methods (i.e. trackhoe) limit the effective depth to approximately 25 to 28 ft. As noted in previous correspondence, OCD's concern regarding possible movement of hydrocarbons beneath the trench is being addressed by placement of interception/recovery wells.

OCD recommended that a series of wells be located along the south side of highway 82 west of Bolton Road. Navajo considered the suggestion and declines to install boreholes in that location for the following reasons. First boreholes placed in an west-east direction would only capture hydrocarbons in the immediate vicinity as the general groundwater flow is also west to east (with a slight southeasterly component in that area). As mentioned above, wells placed perpendicular to the direction of flow provide the best opportunity to capture hydrocarbons. Second, the wells would not capture product that may have already migrated past that area to the vicinity of the existing recovery trench. Third, the presence of buried petroleum product pipelines in the ROW complicates drilling and placement in the farmers field has limitations as described above.

To address the possible problem of underflow beneath the south Bolton Road trenches, earlier this month Navajo drilled ten investigatory boreholes on the east side of Bolton Road south of Highway 82 and completed eight of them as interception/recovery wells (Figure 2). Boreholes BH-06-03 and BH-06-11 were plugged back to the surface with bentonite (borehole logs not available, see footnote previous page). The other eight boreholes either had hydrocarbon saturation or had sufficient show of hydrocarbons that they were completed as interception/recovery wells.

Below 15 ft., the borehole logs (to be provided later as described above) show thick vertical zones of clay and thin zones of fractured caliche, gravelly clay and occasional fine-grained sands. Water and petroleum hydrocarbon (when present) is found in the fractured caliche and gravelly clay. These more permeable zones are seldom more than a few inches thick while the clay may be several feet thick. Though the clay is sandwiched between water saturated zones, it is commonly very dry, very stiff and quite plastic when moisture is added. Though the clay sometimes was gray and had a strong H/C odor very little saturation was noted.

Table 1 shows the result of hydrocarbon analysis of the samples; very little if any hydrocarbons were found beneath a depth of about 30 ft. BH-06-06 and 06-07 were the exceptions with contamination from 33-34 ft. in 06-06 and at 38-39 ft. in 06-07. Though precautions to prevent cross-contamination were taken (the sample was collected following trimming to remove soil in direct contact with the core barrel), the latter sample may have been affected in that manner; the two samples taken immediately above were clean.

In summary, all borehole samples had some degree of hydrocarbon impact, ranging from staining and odor to hydrocarbon product saturation. In addition to MW-57, the following boreholes were observed to show product saturation in one or more samples: BH-06-04, 06-06, 06-07, 06-08, and 06-10.

Except for boreholes 06-03 and 06-11 which were plugged with bentonite, the boreholes were completed as interception/recovery wells with 4-in. diameter casing and 15 ft. of screen from about 17 to 32 ft. The wells were measured and developed on October 20. Wells 06-06 through 06-09 were observed to have a hydrocarbon sheen and odor but the sheen was not thick enough to measure. Monitor well MW-57 was gauged on September 28 and 0.59 ft. of product was measured. Navajo has contract staff who inspect and recover hydrocarbon product from the wells/trenches on a routine basis.

Also, we have enclosed a copy of a document entitled Borehole Lithologic Data 1991-1997. This document contains dozens of borehole logs that were drilled to delineate the plumes east of the refinery. This document should give OCD a better understanding of the work we have already done in this area.

The borehole logs absent from this report will be provided via e-mail as soon as the software problem is resolved, which should be in the next day or so.

If you have any questions regarding this material, please contact me at (505) 748-3311.

Sincerely,  
**NAVAJO REFINING COMPANY, LLC**



Darrell Moore  
Environmental Manager for Water and Waste  
encl. Figures 1, Figure 2, Table 1, Report-Borehole Lithologic Data 1991-1997.

cc. David Boyer, Safety and Environmental Solutions

SECTION 9

US HIGHWAY 82

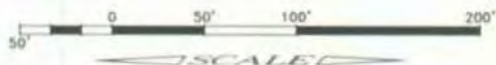
CATTLE GUARD

SECTION 16

RW-11

- BH-06-11
- BH-06-10
- BH-06-09
- BH-06-08
- BH-06-07
- BH-06-06
- BH-06-05
- BH-06-04
- + MW-57
- BH-06-02
- BH-06-03

KWB-9



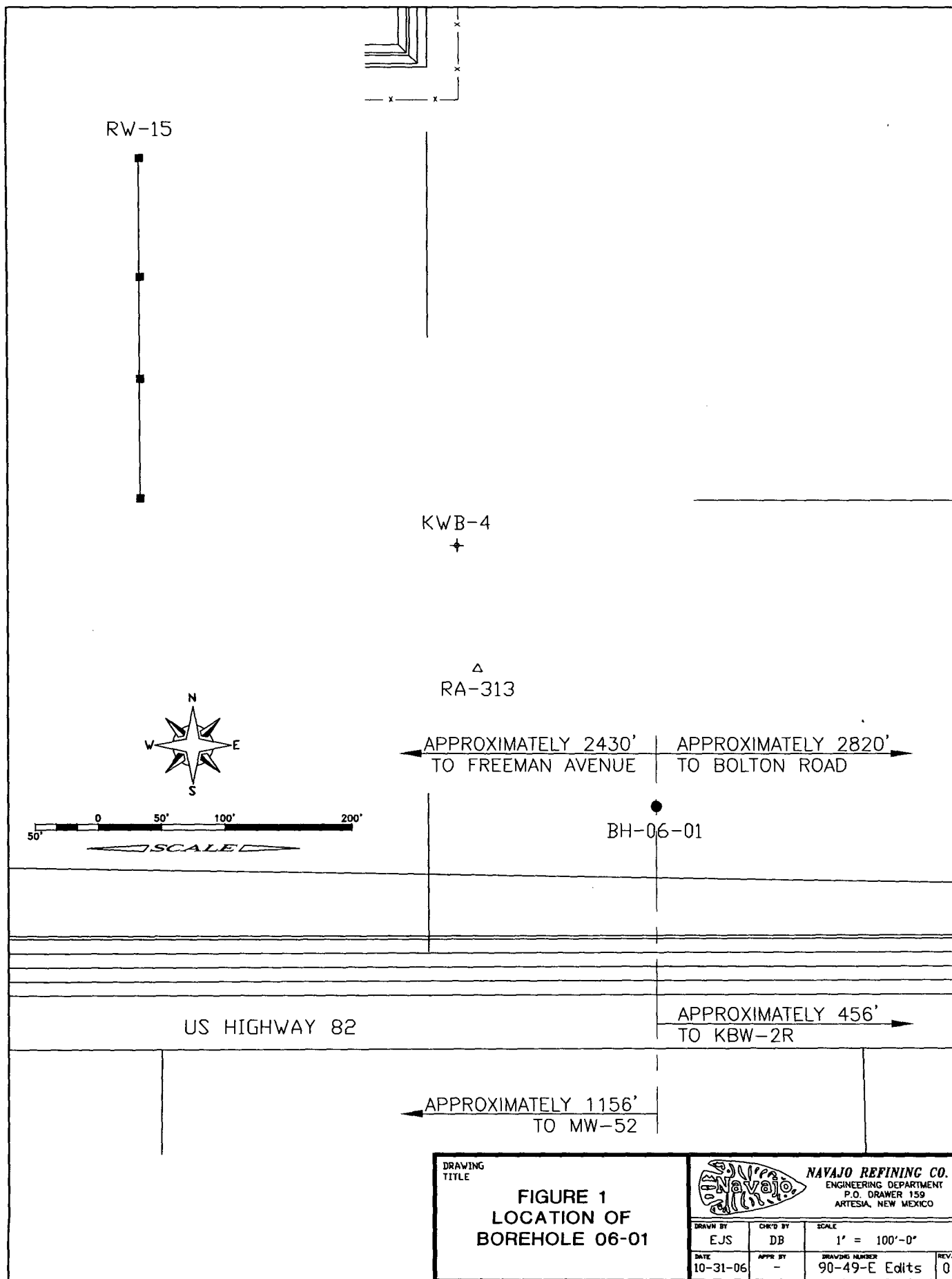
DRAWING  
TITLE

FIGURE 2  
LOCATION OF BOLTON  
ROAD BOREHOLES



NAVAJO REFINING CO.  
ENGINEERING DEPARTMENT  
P.O. DRAWER 159  
ARTESIA, NEW MEXICO

DRWN BY	CHK'D BY	SCALE
EJS	DB	1" = 100'-0"
DATE	APP'D BY	DRAWING NUMBER
10-31-06	-	90-49-E Edits
		REV
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DRAWING  
TITLE

**FIGURE 1  
LOCATION OF  
BOREHOLE 06-01**


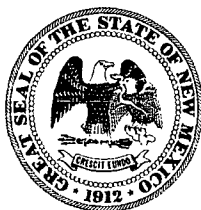
		<b>NAVAJO REFINING CO.</b> ENGINEERING DEPARTMENT P.O. DRAWER 159 ARTESIA, NEW MEXICO	
DRAWN BY EJS	CHK'D BY DB	SCALE 1" = 100'-0"	
DATE 10-31-06	APPR BY -	DRAWING NUMBER 90-49-E Edits	REV. 0

Table 1. Borehole Soil Sampling Results, Offsite Hydrocarbon Investigation, Fall 2006  
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			µg/Kg				
			DRO	GRO	TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
BH-06-01	20-22	09/28/06	88	5.8	93.8	430	1,900	33,000	22,000	57,330
BH-06-01	33-34	09/28/06	<50	0.067	0.067	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-01	44-44.5	09/28/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-02	22-22.5	09/28/06	68	85	153	280	2,000	5,100	4,300	11,680
BH-06-02	27-28	09/28/06	<50	<0.050	ND	<1.0	1.9	<1.0	<3.0	1.9
BH-06-02	32-33	09/28/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-03	17-18	09/29/06	<50	<0.050	ND	<1.0	2.6	1.4	<3.0	4.0
BH-06-03	22-23	09/29/06	56	26	82	32	1,000	6,400	3,600	11,032
BH-06-03	27-28	09/29/06	<50	<0.050	ND	<1.0	2.3	1.2	<3.0	3.5
BH-06-03	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-04	16-17	09/29/06	<50	<0.050	ND	1.2	<1.0	<1.0	<3.0	1.2
BH-06-04	23-24	09/29/06	73	310	383	2,100	5,900	64,000	34,000	106,000
BH-06-04	27-28	09/29/06	<50	0.058	0.058	<1.0	<1.0	1.6	3.7	5.3
BH-06-04	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	21-22	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	26-27	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	32-33	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	37-38	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-06	22-23	10/04/06	<50	110	110	270	1,000	10,000	2,500	13,770
BH-06-06	28-29	10/04/06	150	350	500	1,500	2,100	26,000	12,000	41,600
BH-06-06	33-34	10/04/06	53	350	403	2,300	1,500	21,000	6,400	31,200
BH-06-06	37-38	10/04/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	20-25	10/05/06	No sample, H/C product saturated			--	--	--	--	--
BH-06-07	28-29	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	32-33	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	38-39	10/05/06	<50	0.12	0.12	16	48	250	370	684
BH-06-08	16	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	23-24	10/09/06	200	260	460	85	600	6,100	4,900	11,685
BH-06-08	27-28	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	33-34	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	37-38	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	17	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	23-24	10/10/06	<50	<0.050	ND	<1.0	3.2	<1.0	<3.0	3.2
BH-06-09	27-28	10/10/06	<50	<0.050	ND	<1.0	3.0	1.0	<3.0	4.0
BH-06-09	33-34	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	37-38	10/10/06	<50	<0.050	ND	<1.0	<1.0	4.3	<3.0	4.3
BH-06-10	17-18	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	23-24	10/11/06	81	36	117	1.9	610	590	1,400	2,602
BH-06-10	27-28	10/11/06	<50	<0.050	ND	<1.0	58	35	19	112
BH-06-10	33-34	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	38-39	10/11/06	<50	<0.050	ND	<1.0	1.6	<1.0	<3.0	1.6

Table 1. Borehole Soil Sampling Results, Offsite Hydrocarbon Investigation, Fall 2006  
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			µg/Kg				
			DRO	GRO	TPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX
BH-06-11	18-19	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	23-24	10/12/06	<50	15	15	23	620	440	1,600	2,683
BH-06-11	29-30	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	33-34	10/12/06	<50	<0.050	ND	<1.0	3.4	<1.0	3.0	6.4
BH-06-11	39-40	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
TPH - Total Petroleum Hydrocarbons, sum of DRO + GRO										
DRO - Diesel Range Organics										
GRO - Gasoline Range Organics										
ND - Not detected										
TPH analysis using EPA SW-846 method SW-8015B (modified)										
BTEX analysis using EPA SW-846 method SW-8021B										
Analyses performed by e-Lab, Houston, Texas										



**BILL RICHARDSON**  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-8801* 56  
*Telephone (505) 428-2500*  
*Fax (505) 428-2567*

*www.nmenv.state.nm.us*



**RON CURRY**  
SECRETARY

**CERTIFIED MAIL-RETURN RECEIPT REQUESTED**

October 31, 2006

Darrell Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88211-0159

**RE: APPROVAL WITH MODIFICATIONS**  
**EVAPORATION PONDS**  
**CORRECTIVE ACTION INVESTIGATION WORKPLAN**  
**NAVAJO REFINING COMPANY, ARTESIA REFINERY, HWB-NRC-06-003**  
**EPA ID #: NMDO48918817**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) is in receipt of Navajo Refining Company's (Permittee) report titled *Evaporation Ponds Corrective Action Investigation Workplan* (Work Plan), dated August 2006. The Work Plan outlines additional investigation activities proposed at the Evaporation Ponds. NMED hereby approves the Work Plan with conditions outlined below. As required by the Permit, the field activities described in the Work Plan must be initiated within 90 days of receipt of this letter and the Permittee must submit an Investigation Report to NMED within 150 days of completing field activities. The Permittee must adhere to all conditions set forth in this letter.

**Comment 1**

The Permittee states in Section 3.0 (Background), page 7 of the Work Plan "However, Navajo owns the property above the suspected plume, and the groundwater is not used for any purpose."

Ownership of land does not relieve the Permittee of the responsibility to comply with all applicable Regulations.



Darrell Moore  
Navajo Refining Company  
October 31, 2006  
Page 2

**Comment 2**

The information provided in Section 4.0 (Site Conditions) should also include site topography, features, structures, drainage, and vegetation as specified in Appendix E, Section E.2.f of the Post Closure Care Permit.

**Comment 3**

In Section 5.1 (Evaporation Ponds), page 11, bullet 1, the Permittee states soil samples will be analyzed for one (1) or more of the following: gasoline-range organics (GRO), diesel-range organics (DRO).....”

The Permittee must analyze the soil samples for the target analytes detected during the June/July 2004 investigation of the Evaporation Ponds. The Permittee may choose to analyze only for the metals detected during the previous investigations instead of running the full RCRA metals suite.

Also, the Work Plan does not address methods and procedures for soil sampling. The Permittee must ensure all instruments are calibrated properly and sampling methods and procedures are properly followed in accordance with the applicable Sections in Appendix C (Sampling Methods and Procedures) more specifically Sections C.2.b.ii (Soil Sampling) and C.2.b.iii (Surface Sampling) of the Post Closure Care Permit.

**Comment 4**

Section 5.0 (Evaporation Ponds), page 11, bullet 3, (also addressed in Section 6.2 and Appendix B) provides the analysis for groundwater samples for monitoring wells and a monitoring schedule.

The groundwater sampling analyte list must include nitrates/nitrites. The monitoring schedule states that groundwater sample collection will be conducted semi-annually for three years. NMED will reevaluate the monitoring schedule at the end of the three year period to determine future monitoring requirements.

**Comment 5**

Appendix B (Groundwater Sampling Methodology) of the Work Plan describes the proposed sampling methods and procedures for sampling of the monitoring wells. This section does not address procedures if separate phase hydrocarbons (SPH) are encountered. The Permittee must test for and measure SPH, if present, in all monitoring wells to an accuracy of 0.01 foot. If SPH is detected in monitoring wells, the water table elevation shall be corrected by adding 0.8 times the measured product thickness to the calculated water table elevation.

Darrell Moore  
Navajo Refining Company  
October 31, 2006  
Page 3

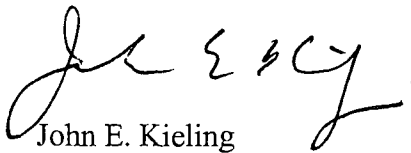
**Comment 6**

The Permittee states in Appendix C (Investigation Derived Waste), page 20, paragraph 3 of the Work Plan "Based on the results of the sample analysis the water will either be disposed at an approved water disposal facility, used as process water at the refinery or will be emptied on-site."

The Permittee can only discharge the water generated during sampling on-site if the water is demonstrated to be clean.

If you have any questions regarding this letter please contact me at (505) 428-2545.

Sincerely,



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

JEK/hm

cc: D. Cobrain, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
D. Whaley, NRC  
S. Hall, ARCADIS  
L. King, EPA-6PD-N  
File: Reading and NRC 2006  
HWB-NRC-06-003

**Chavez, Carl J, EMNRD**

---

**From:** Moore, Darrell [Darrell.Moore@hollycorp.com]  
**Sent:** Tuesday, October 31, 2006 2:22 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Response

Carl,

Attached is our response tfor the discharge permit that we promised by October 31, 2006. I will hand deliver a hard copy tomorrow when we meet for the hydrotest of the waste water line.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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10/31/2006

October 31, 2006

Mr. Carl J. Chavez, CHMM  
Environmental Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Subject: Update Report on Status of Hydrocarbon Investigation Required as a Condition of Discharge Plan Renewal, GW-028, Artesia Refinery

This letter report provides the OCD with information on progress of the above investigation as outlined in our letter of July 25, 2006 and your e-mail of August 14, 2006. Some of the required information listed in that e-mail has been submitted to the Division. This letter report responds to and provides information on the status of other elements of the investigation together with work that is scheduled for November 2006 and later.

- Item ii. Investigation work between MW-52 and KWB-2R and between the midpoint and KWB-4. A boring was advanced to a depth of 45 ft. at the location shown in Figure 1. Borehole samples and cuttings had hydrocarbon staining and odor mainly from a depth of 20 to 30 ft., but no hydrocarbon product was detected. Soil samples were collected that show minimal impact from 33 to 34 ft. and none at 45 ft. (Table 1). The boring was not completed as a recovery well and was plugged with bentonite (hydrated)\*.
- Item iv. To determine whether product is moving beneath the recovery trench in the area along Bolton Road immediately north of highway 82, Navajo was prepared to begin investigation of the area on the east side of Bolton Road and had staked borehole locations on October 11 and performed One-call notification. However, construction of a warehouse and yard by Chase Farms was underway at the site and heavy equipment was located and moving over the drilling locations. After discussions with Chase, it was determined that most of their heavy equipment will have completed work by mid-November so borehole investigation will recommence at that time.

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\* Due to a software failure on Monday evening (10/30) printing of existing and new borehole logs was not possible for inclusion in this report. They will be provided as soon as the program is up and running again which will very likely be tomorrow (Wednesday, 11/01) or Thursday.

Regarding investigation in the Chase Farms pecan orchard, as mentioned in the Navajo July 25, 2006 letter, presence of heavy equipment in the orchard to install a trench is very unlikely given the existence of mature trees. During our recent groundwater sampling event we could not get equipment in to sample the wells and they were hand bailed. There is a slim possibility that Navajo may be allowed to drill investigatory borings and complete additional wells following the harvest season and during the dormant period when the trees are trimmed so as to maximize pecan production the following season. Navajo will approach Mr. Chase regarding that possibility, but additional work before the harvest is completed is not a possibility.

- Item v. OCD suggests that Navajo drill a well in the farmer's field to detect hydrocarbons. The field is an active agricultural farm; Navajo has lost wells in similar areas (e.g. KWB-2A and 2B) due to crop rotation and routine farm activities. We also have monitor wells downgradient from the field to detect any migration to that area.

Beginning in 1991, Navajo investigated and documented the presence of hydrocarbons in the area emanating from the refinery and installed the trenches along Bolton Road to capture such hydrocarbons. There is no evidence that any hydrocarbons are the result of any cause (e.g. pipeline leak) other than migration from the refinery.

We are including a large volume of material including maps and borehole logs showing the locations drilled and the resultant presence or absence of petroleum hydrocarbons. The migration of the hydrocarbons has been documented (in reports to the US EPA and NMED) as being due to the existence of near-surface buried braided stream channels of high permeability material surrounded by very low permeability clays and clayey silts. The channels are a result of stream flow and movement of clastic material in the Eagle Draw drainage, which begins in the Sacramento foothills to the west of Artesia.

There is no surface expression of these channels, which are characterized by sands and gravels ranging from less than one inch to rounded limestone cobbles several inches in diameter. The channels are random in both vertical and horizontal directions. Gravel found in a borehole at a depth of 20 to 25 ft. may not be present in a borehole 25 to 30 ft. away. Further complicating the lithology is the presence of caliche at various depths, usually associated with clay, which provides for some saturation in fracture zones but little permeability.

Because tracing individual channels, which change direction and lithology with distance, is very difficult, trenches were installed along Bolton Road perpendicular to the direction of groundwater flow to capture hydrocarbons by allowing them to move to permeable gravel beds installed in the trenches where they could be recovered using skimmer pumps. Lower water tables and

limitations on excavation using surface methods (i.e. trackhoe) limit the effective depth to approximately 25 to 28 ft. As noted in previous correspondence, OCD's concern regarding possible movement of hydrocarbons beneath the trench is being addressed by placement of interception/recovery wells.

OCD recommended that a series of wells be located along the south side of highway 82 west of Bolton Road. Navajo considered the suggestion and declines to install boreholes in that location for the following reasons. First boreholes placed in an west-east direction would only capture hydrocarbons in the immediate vicinity as the general groundwater flow is also west to east (with a slight southeasterly component in that area). As mentioned above, wells placed perpendicular to the direction of flow provide the best opportunity to capture hydrocarbons. Second, the wells would not capture product that may have already migrated past that area to the vicinity of the existing recovery trench. Third, the presence of buried petroleum product pipelines in the ROW complicates drilling and placement in the farmers field has limitations as described above.

To address the possible problem of underflow beneath the south Bolton Road trenches, earlier this month Navajo drilled ten investigatory boreholes on the east side of Bolton Road south of Highway 82 and completed eight of them as interception/recovery wells (Figure 2). Boreholes BH-06-03 and BH-06-11 were plugged back to the surface with bentonite (borehole logs not available, see footnote previous page). The other eight boreholes either had hydrocarbon saturation or had sufficient show of hydrocarbons that they were completed as interception/recovery wells.

Below 15 ft., the borehole logs (to be provided later as described above) show thick vertical zones of clay and thin zones of fractured caliche, gravelly clay and occasional fine-grained sands. Water and petroleum hydrocarbon (when present) is found in the fractured caliche and gravelly clay. These more permeable zones are seldom more than a few inches thick while the clay may be several feet thick. Though the clay is sandwiched between water saturated zones, it is commonly very dry, very stiff and quite plastic when moisture is added. Though the clay sometimes was gray and had a strong H/C odor very little saturation was noted.

Table 1 shows the result of hydrocarbon analysis of the samples; very little if any hydrocarbons were found beneath a depth of about 30 ft. BH-06-06 and 06-07 were the exceptions with contamination from 33-34 ft. in 06-06 and at 38-39 ft. in 06-07. Though precautions to prevent cross-contamination were taken (the sample was collected following trimming to remove soil in direct contact with the core barrel), the latter sample may have been affected in that manner; the two samples taken immediately above were clean.

In summary, all borehole samples had some degree of hydrocarbon impact, ranging from staining and odor to hydrocarbon product saturation. In addition to MW-57, the following boreholes were observed to show product saturation in one or more samples: BH-06-04, 06-06, 06-07, 06-08, and 06-10.

Except for boreholes 06-03 and 06-11 which were plugged with bentonite, the boreholes were completed as interception/recovery wells with 4-in. diameter casing and 15 ft. of screen from about 17 to 32 ft. The wells were measured and developed on October 20. Wells 06-06 through 06-09 were observed to have a hydrocarbon sheen and odor but the sheen was not thick enough to measure. Monitor well MW-57 was gauged on September 28 and 0.59 ft. of product was measured. Navajo has contract staff who inspect and recover hydrocarbon product from the wells/trenches on a routine basis.

The borehole logs absent from this report will be provided via e-mail as soon as the software problem is resolved, which should be in the next day or so.

If you have any questions regarding this material, please contact me at (505) 748-3311.

Sincerely,  
NAVAJO REFINING COMPANY, LLC

Darrell Moore, Environmental Manager for Water and Waste

encl. Figures 1, Figure 2, Table 1, Report-Borehole Lithologic Data 1991-1997.

cc. David Boyer, Safety and Environmental Solutions

RW-15

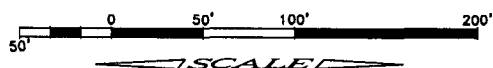
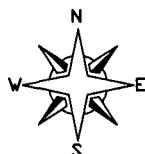
KWB-4

△  
RA-313

← APPROXIMATELY 2430'  
TO FREEMAN AVENUE

APPROXIMATELY 2820'  
TO BOLTON ROAD →

BH-06-01



US HIGHWAY 82

APPROXIMATELY 456'  
TO KBW-2R →

← APPROXIMATELY 1156'  
TO MW-52

DRAWING  
TITLE

**FIGURE 1  
LOCATION OF  
BOREHOLE 06-01**



**NAVAJO REFINING CO.**  
ENGINEERING DEPARTMENT  
P.O. DRAWER 159  
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	DATE	APPR BY	DRAWING NUMBER	REV.
EJS	DB	1" = 100'-0"	10-31-06	-	90-49-E Edits	0



SECTION 9

US HIGHWAY 82

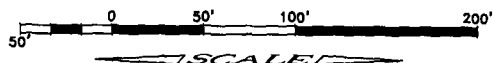
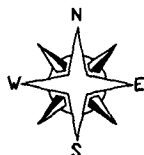
CATTLE GUARD

SECTION 16

RW-11

- BH-06-11
- BH-06-10
- BH-06-09
- BH-06-08
- BH-06-07
- BH-06-06
- BH-06-05
- BH-06-04
- + MW-57
- BH-06-02
- BH-06-03

KWB-9



DRAWING  
TITLE

**FIGURE 2  
LOCATION OF BOLTON  
ROAD BOREHOLES**



**NAVAJO REFINING CO.**  
ENGINEERING DEPARTMENT  
P.O. DRAWER 159  
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE
EJS	DB	1" = 100'-0"
DATE	APPR BY	DRAWING NUMBER
10-31-06	-	90-49-E Edits
		REV. 0

Table 1. Borehole Soil Sampling Results, Offsite Hydrocarbon Investigation, Fall 2006  
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			Benzene	Toluene	µg/Kg	Total Xylenes	Total BTEX
			DRO	GRO	TPH			Ethyl-benzene		
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BH-06-02	32-33	09/28/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-03	17-18	09/29/06	<50	<0.050	ND	<1.0	2.6	1.4	<3.0	4.0
BH-06-03	22-23	09/29/06	56	26	82	32	1,000	6,400	3,600	11,032
BH-06-03	27-28	09/29/06	<50	<0.050	ND	<1.0	2.3	1.2	<3.0	3.5
BH-06-03	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-04	16-17	09/29/06	<50	<0.050	ND	1.2	<1.0	<1.0	<3.0	1.2
BH-06-04	23-24	09/29/06	73	310	383	2,100	5,900	64,000	34,000	106,000
BH-06-04	27-28	09/29/06	<50	0.058	0.058	<1.0	<1.0	1.6	3.7	5.3
BH-06-04	33-34	09/29/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	21-22	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	26-27	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	32-33	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-05	37-38	10/03/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-06	22-23	10/04/06	<50	110	110	270	1,000	10,000	2,500	13,770
BH-06-06	28-29	10/04/06	150	350	500	1,500	2,100	26,000	12,000	41,600
BH-06-06	33-34	10/04/06	53	350	403	2,300	1,500	21,000	6,400	31,200
BH-06-06	37-38	10/04/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	20-25	10/05/06	No sample, H/C product saturated			--	--	--	--	--
BH-06-07	28-29	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	32-33	10/05/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-07	38-39	10/05/06	<50	0.12	0.12	16	48	250	370	684
BH-06-08	16	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	23-24	10/09/06	200	260	460	85	600	6,100	4,900	11,685
BH-06-08	27-28	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	33-34	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-08	37-38	10/09/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	17	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	23-24	10/10/06	<50	<0.050	ND	<1.0	3.2	<1.0	<3.0	3.2
BH-06-09	27-28	10/10/06	<50	<0.050	ND	<1.0	3.0	1.0	<3.0	4.0
BH-06-09	33-34	10/10/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-09	37-38	10/10/06	<50	<0.050	ND	<1.0	<1.0	4.3	<3.0	4.3
BH-06-10	17-18	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	23-24	10/11/06	81	36	117	1.9	610	590	1,400	2,602
BH-06-10	27-28	10/11/06	<50	<0.050	ND	<1.0	58	35	19	112
BH-06-10	33-34	10/11/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-10	38-39	10/11/06	<50	<0.050	ND	<1.0	1.6	<1.0	<3.0	1.6

Table 1. Borehole Soil Sampling Results, Offsite Hydrocarbon Investigation, Fall 2006  
Navajo Refining Company, Artesia, New Mexico

Borehole ID	Depth (ft.)	Date	mg/Kg			µg/Kg				
			DRO	GRO	TPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX
BH-06-11	18-19	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	23-24	10/12/06	<50	15	15	23	620	440	1,600	2,683
BH-06-11	29-30	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
BH-06-11	33-34	10/12/06	<50	<0.050	ND	<1.0	3.4	<1.0	3.0	6.4
BH-06-11	39-40	10/12/06	<50	<0.050	ND	<1.0	<1.0	<1.0	<3.0	<1.0
TPH - Total Petroleum Hydrocarbons, sum of DRO + GRO										
DRO - Diesel Range Organics										
GRO - Gasoline Range Organics										
ND - Not detected										
TPH analysis using EPA SW-846 method SW-8015B (modified)										
BTEX analysis using EPA SW-846 method SW-8021B										
Analyses performed by e-Lab, Houston, Texas										

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, October 25, 2006 3:35 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD; Bratcher, Mike, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV  
**Subject:** RE: Discharge Plan

Darrell:

Please look over the OCD's e-mail dated August 14, 2006. You will need to address those items and in your cover letter reference the items that were not achievable and provide a schedule for completion. I will be depending on you to address those items before I can process the discharge plan for Artesia, i.e., static water levels, new updated map, etc. Seems like the work in the vicinity of the Chase's will need to be rescheduled; however, you need to consider the concerns in the paragraph below.

Regarding the pecan orchard area, I would expect that Navajo would want to make sure the location of the Chase building is acceptable and is not subject to explosion or contamination hazards. You may want to communicate to them the serious nature of the situation and offer to conduct some ground water work and provide monitoring during the construction of the building for their safety. Perhaps from this perspective, the Chase's will have no problem with further delineation on their property before Thanksgiving. If you need the agencies assistance in this matter, please provide a phone number to the NMED and OCD for our consideration of whether the situation warrants further discussion with the Chase's. If Navajo cannot complete the task before the discharge plan is complete, the OCD will carry it over to the discharge plan, but will require a date for completion.

Please contact me if you have questions. Thank you.

---

**From:** Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]  
**Sent:** Wednesday, October 25, 2006 2:23 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD  
**Subject:** Discharge Plan

Carl,

We have drilled a new bank of wells on the east side of Bolton Road across from RW-11 on the south side of US 82. These wells have free product in them and we will be rigging them up as recovery wells and pumping them back to the refinery. We also have done some borings along US 82 between KWB-2R and the refinery. We have found nothing in those wells.

We had planned to do some drilling across from RW-12 along Bolton Road as you had requested and also to try to do some delineation in the Pecan Orchard but the Chases are adamantly against that. They refused us access to do any drilling in this area until at least after harvest season. They are also in the process of building a new shop right across from RW-12 and they refused us access in this area until that construction is finished. This should be around Thanksgiving.

We will prepare a report on the drilling we have done and get that to you by October 31 as we said we would. I just wanted to give you a heads-up that we couldn't finish the drilling at this time.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
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10/25/2006

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BILL RICHARDSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Telephone (505) 428-2500  
Fax (505) 428-2567  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RON CURRY  
SECRETARY

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

October 20, 2006

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

**RE: RESPONSE TO NOTICE OF DEFICIENCY (NOD)  
GROUNDWATER MONITORING WORK PLAN  
NAVAJO REFINING COMPANY, ARTESIA REFINERY, HWB-NRC-05-001  
EPA ID # NMD048918817**

2006 OCT 23 PM 1 48

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of the Navajo Refining Company, Artesia Refinery's (the Permittee) revised *Groundwater Monitoring Work Plan* (Work Plan) dated October 2, 2006. In order to complete our administrative record, the Permittee must provide replacement pages to the plan in response to the comments list below.

**Comment**

The Permittee did not define all acronyms found in the document nor was an acronym page provided. The Permittee must provide an additional page that defines the following acronyms: NCL, TEL, WQCC, VOA's, BTEX, RPDs, and DQO.

**Comment 2**

The Permittee must provide an additional page that describes the calibration procedures used for the YSI 556 Multi Probe System and any other calibration methods for the instruments used during the groundwater sampling event.

Mr. Darrell Moore  
Navajo Refining Company  
October 20, 2006  
Page 2 of 2

**Comment 3**

The Permittee does not describe how groundwater samples are collected in Section 4.0 (Investigation Methods) of the Work Plan. This was briefly described in Section 4.0 of the original Groundwater Monitoring Work Plan, dated June 30, 2006.

The Permittee must provide a description of the methods used to measure water and product. In addition describe how groundwater samples are collected (e.g., dedicated bailers, disposable bailers, pumps). The additional page must also provide the calculations used to determine purge volumes.

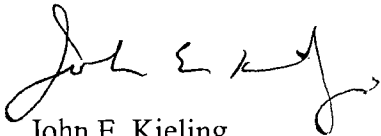
**Comment 4**

The Permittee states in Section 4.3, paragraph one on page six of the Report that "[t]he samples shall be handled as described in Section C.2.j below." The reference to C.2.j appears to be a typographical error and should reference Section 4.4 (Sample Handling).

The Permittee must submit replacement pages with the appropriate corrections no later than December 1, 2006.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



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

JEK:hm

cc: D. Cobrain, NMED HWB  
C. Frischkorn, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
L. King, EPA Region 6 (6PD-N)  
D. Whaley, NRC  
J. Byrd, NRC  
File: Reading File and NRC 2006  
HWB-NRC-05-001

**Chavez, Carl J, EMNRD**

---

**From:** Price, Wayne, EMNRD  
**Sent:** Friday, October 20, 2006 7:37 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** FW: Navajo Refining Well No.3 70f5826

please file

---

**From:** Jim Bundy [mailto:jbundy@subsurfacegroup.com]  
**Sent:** Thursday, October 19, 2006 4:52 PM  
**To:** Price, Wayne, EMNRD  
**Cc:** Darrell Moore; John Fleniken; 'Rusty Smith'; Ken Davis; 'Shannon Beeler'  
**Subject:** Navajo Refining Well No.3 70f5826

Wayne,

Thank you for returning my call.

This email is to confirm our telephone conversation today, October 19, 2006 regarding the re-completion of the subject well. We discussed the status of the operations on the well including squeeze cementing of the old perforations, the cement bond log, the casing inspection log, and the results of pressure testing the casing.

We discussed the casing in the well including the surface casing set at 400 feet and the intermediate casing set at 2604 feet. Both casing strings were reported to have been cemented to surface. We discussed the top of the cement between the 7-inch casing and the 9-5/8-inch casing which was located approximately 900 feet below surface and compared it with the calculated cement top in the permit application at 1547 feet.

Our preliminary pressure test indicates a very slow pressure loss that is probably within the guidelines for mechanical integrity, however it may lose annular fluid during operations.

We discussed several options for detecting and repairing the leak. I offered the 300-PSI Sealmaker approach as our recommendation. We will pressure test the casing again and attempt to isolate the depth of the leak, then design a 300-PSI Sealmaker treatment to repair the leak. We proposed to pump the treatment down the annulus of the 4-1/2-inch injection tubing just before setting the injection packer and leaving it in the annulus. Then, applying pressure to the annulus should effect a seal within a few days.

Your concurrence with this approach is appreciated. We will be installing the injection tubing early next week.

I will forward you the information I have on the 300-PSI tomorrow in a PDF file. The website is [www.300psi.com](http://www.300psi.com) and there is a lot of information on the site. We will also give you advance notice before we conduct the pressure falloff testing so you can witness the work in the field.

Should you have any questions, please feel free to contact me at any time. Thank you again for your concurrence with our suggested approach.

Jim Bundy  
Subsurface Technology, Inc.  
Subsurface Construction Corp.  
6925 Portwest Drive Suite 110  
Houston, TX 77024  
Office: 713-880-4640  
Fax: 713-880-3248  
Cell: 713-824-7487  
[jbundy@subsurfacegroup.com](mailto:jbundy@subsurfacegroup.com)

10/20/2006



October 12, 2004

9:12 AM

**300PSI**

INTEGRITY RESTORATION SERVICES

**INJECTION-WELL CASING LEAK REPAIR**

**300PSI** has a multitude of treatment designs for the various injection-well profiles that exist. Leak characteristics dictate how we need to apply our product. For shallow leaks that can be pumped into at fairly low pressures (i.e. 250 psig or less) and/or that exhibit high leak-off rates, the typical application is to attempt the repair by "bull-heading" directly into the leak. This approach works well as long as depth is fairly shallow and the leak can be pumped into easily. As the depth of the leak increases it becomes more practical to release the packer and spot the **Seal-Maker** treatment down the annulus.

Tight leaks that cannot be pumped into easily, require that the packer be released so that the **Seal-Maker** treatment can be circulated easily into the well-bore annulus.

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TO CONTACT US:

Phone: 618-395-7395 Fax: 618-395-7396  
800-207-7395  
Email: [ToddHarris@300PSI.com](mailto:ToddHarris@300PSI.com)

October 12, 2004

9:12 AM

**300PSI**

INTEGRITY RESTORATION SERVICES

**HOW IT WORKS?**

The **300PSI Seal-Maker** system was originally designed to repair single and multiple casing leaks that occur in an injection well annulus where there is direct communication, through a leak in the casing string, directly into the original open-hole well-bore and the adjacent earth strata.

The system is a multiple stage chemical process. The chemicals are pumped in conjunction with one another to react in a precisely controlled order. The chemicals ultimately yield a composite cement that sets externally to the casing and is independent of time constraint. The composite develops excellent strength characteristics that increase over time. The composite is stable throughout the entire pH range adding long term stability while in direct contact with acidic or alkaline formation fluids. The final result is a permanent casing repair.

The process is initiated by pressure differential and shear. As the chemicals coalesce they start to form a bridging mechanism that is highly porous. This porous medium allows a filtration process to occur. Sequentially, the composite materials then provide the additional filtration components and the molecular elements that are necessary to build a crystalline composite cement structure.

Crystallization of the composite progresses as the chemicals filtrate through and around the bridging medium.

This filtration process continues until the composite has fully developed from the initial point of restriction inwards to the well casing. The last stage provides additional molecular components that impregnate the crystalline structure to enhance the solidification of the composite. Compressive strength builds at this point as a non-permeable seal forms

300PSI HOME

HOW IT WORKS?

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permanently at the leak. Since no further filtration is possible beyond the leak point, residual fluid inside the casing cannot undergo the physical process necessary to initiate solidification, thus ensuring that it remains liquid.

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**TO CONTACT US:**

**PHONE: 618-395-7395 or 618-395-7395  
800-207-7395  
E-Mail: [ToddHarris@300PSI.COM](mailto:ToddHarris@300PSI.COM)**

October 12, 2004

9:12 AM



# 300PSI

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## HISTORY OF 300PSI

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*300PSI* was founded by *SealMaker* inventors Todd K. Harris and Kenneth E. Harris in 1994. Two original products were designed specifically to address casing leaks for injection well casings that could not pass their required Mechanical Integrity Pressure Tests (MIT). The emergence of *Enviro-plug* and *Enviro-seal* provided operators with a relatively inexpensive method to plug small leaks. Soon it became apparent to them that a superior product was needed. In 1995 after several design attempts, the first *Seal-Maker* products were successfully tested. The product performed exceptionally well. 37 successful treatments in a row fueled a full dedicated commitment towards the development of the system for oilfield applications. The chemical combinations necessary to precisely control the solidification process were refined and the *Seal-Maker System* evolved. The process was implemented and pump equipment was built specifically for the product. Today, seven years later, the success rate remains at an incredible 95%. With over 400 sealing treatments throughout the world, the *300PSI Seal-Maker* technology has gained the acceptance as a conventional and permanent repair method.

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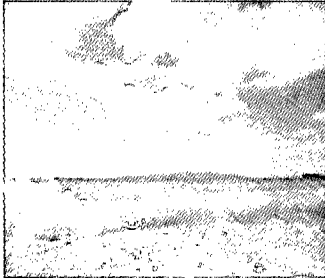
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Phone: 618-395-7395 Fax: 618-395-7396  
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October 12, 2004

9:12 AM



# 300PSI

INTEGRITY RESTORATION SERVICES

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Now that we have entered the new millennium, new obstacles are upon us. As the economy of the United States appears to be slowing, other countries of the world are just beginning to emerge. These exciting people of the world have a fierce desire to become the leaders of tomorrow. They are relentlessly pursuing the development of economic and social expansion. As a result, the Oil & Gas Industry will be called upon to play a pivotal role in providing these growing countries with the energy needs that they require. We must reach to produce energy from remote locations onshore, and farther offshore into deeper and deeper waters to provide the fuels that will be demanded. Technology is the factor that will ultimately determine our ability as an industry to fulfill those requirements. The preservation of the world's existing oil and gas fields are more vital now than ever in history. The protection of our world's lands, our fresh water, our oceans, and our people shall remain the ultimate priority. To help meet the challenges imposed on our industry, 300PSI is fully committed to delivering the technologies necessary to preserve and extend the life of all existing oil and gas fields onshore and offshore. As new application concepts emerge, the testing of those new applications will undoubtedly lead to new discoveries. 300PSI will continue to search to find new ways to help operators reduce their regulatory compliance costs while, at the same time, help them to maintain superior environmental compliance. We will work to ensure that our Earth's water will remain safe for the many centuries to come.

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**TO CONTACT US:**

**Phone: 618-395-7395 Fax: 618-395-7396**  
**800-207-7395**  
**Email: [ToddHarris@300PSI.com](mailto:ToddHarris@300PSI.com)**



**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, September 25, 2006 4:15 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV  
**Subject:** RE: Discharge Plan Permit GW-028 Section "H" Additional Requirements

Darrell:

After discussing Navajo's request to extend the Section "H" (Additional Requirements) Discharge Plan submittal to October 31, 2006 with Wayne Price, please be sure that we receive the Discharge Plan Permit Section "H" requirements on or before October 31, 2006. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Monday, September 25, 2006 10:01 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD  
**Subject:** Discharge Permit

Carl,

Due to the rains earlier this month and last, we were unable to get the drilling rig here until tomorrow due to their commitments to other parties. Therefore, we will be drilling all week putting in monitor wells, recovery wells, and delineation borings. This will make it highly unlikely that we can get the information to you as promised by September 30, 2006. We would be highly appreciative if we could push that date out to October 31, 2006.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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9/25/2006

Hydrotest Procedure for Wastewater Line  
Navajo Refining Company

To insure that the wastewater line from Navajo's Artesia plant maintains its integrity, the following procedure will be followed.

Annually, Navajo will test the line using the wastewater that the line transports. The line will be tested in three sections: 1) the section East of the River, 2) the section under the River, and 3) the section West of the River. This hydrotest will pressure each section of the line to 1.5 times operating pressure (approximately 600 psi) for a period of 4 hrs. A successful test will allow for a variance of + or - 1% of the starting pressure. The test will be recorded on a chart that has been calibrated within 6 months. Further, the chart recorder will have a 1000 lb spring and a 1000 lb chart.

Navajo will notify OCD 5 days in advance of this annual test to allow OCD the opportunity to witness the tests. Any leaks that may be discovered will be reported to OCD within 24 hours. Finally, any water used in this test will be discharged down Navajo's injection wells.



32.83212N, 104.31548W



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Pointer lat 32.831592° lon -104.315800° elev 3342 ft

Streaming ||||| 100%

Eye alt 11100 ft

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9/13-14 / 06 Navajo - Artesia Hydrostatic Test

**Chavez, Carl J, EMNRD**

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**From:** Moore, Darrell [Darrell.Moore@hollycorp.com]  
**Sent:** Monday, September 11, 2006 8:49 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD  
**Subject:** Hydrotest of Effluent Line

Carl,

We are going to start testing the effluent line on Wednesday, September 13, 2006. If you are available we would be glad to have you witness.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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9/12/2006



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

September 6, 2006

CERTIFIED MAIL: RETURN RECEIPT REQUEST (7004 1160 0003 0359 9396)

REPLY TO: 6WQ-NP

Mr. Darrell Moore  
Navajo Refining Company, L.P.  
501 East Main Street  
Artesia, NM 88211-0159

Re: NPDES Application No. NM0030589 - Navajo Refining Company, L.P.

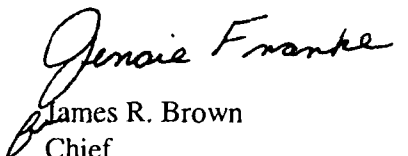
Dear Mr. Moore:

In accordance with your request of August 28, 2006, you are hereby notified that your National Pollutant Discharge Elimination System (NPDES) application for the above referenced facility has been discontinued and void.

Any resumption of the discharge or any new discharge from your facility without a permit will be unlawful. Should you again propose to discharge any pollutants from this facility to waters of the United States, it will be necessary to file a new NPDES application at least 180 days in advance of the proposed discharge.

If you have any questions, please do not hesitate to contact Dorothy Brown at the above address or telephone (214) 665-8141.

Sincerely yours,

  
James R. Brown  
Chief  
Planning and Analysis Branch

cc: NMED

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 31, 2006 1:36 PM  
**To:** 'Moore, Darrell'  
**Subject:** RE: Discharge Permit Fees for Navajo Artesia & Lovington Facilities

Darrell:

Ok. the new submittal date is September 31, 2006 for GW-28. Please take a look at the OCD's e-mail msg. dated August 14, 2006, which addresses your July 25, 2006 letter addressing Section H GW-28. Please contact me if you have questions. Let me know when the OCD can expect to receive the check(s). Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [mailto:[Darrell.Moore@hollycorp.com](mailto:Darrell.Moore@hollycorp.com)]  
**Sent:** Thursday, August 31, 2006 1:26 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Discharge Permit Fees for Navajo Artesia & Lovington Facilities

Carl,

We are going to need an extension on those August 31 dates. We didn't receive your response until August 14 which hasn't given us any time to line up a drill rig. We would appreciate an extension on those dates to September 31 for everything. In addition, I will get the checks to you for the \$16,800 we still owe.

---

**From:** Chavez, Carl J, EMNRD [mailto:[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)]  
**Sent:** Thursday, August 31, 2006 1:12 PM  
**To:** Moore, Darrell  
**Subject:** Discharge Permit Fees for Navajo Artesia & Lovington Facilities

Darrell:

Hey. I am in receipt of two checks each in the amount of \$100 for the filing fees for the Navajo Lovington Refinery (GW-14) and the Navajo Artesia Refinery (GW-28). Per Section 20.6.2.3114 (1)(A) Table 1 (see renewal fee at [http://www.nmenv.state.nm.us/NMED\\_Regs/gwb/20\\_6\\_2\\_NMAC.pdf](http://www.nmenv.state.nm.us/NMED_Regs/gwb/20_6_2_NMAC.pdf)), you appear to be shy \$8,400 for each facility and/or a total amount of \$16,800 for the permit renewal.

In addition, the OCD is awaiting the deliverables from your July 25, 2006 letter addressing the GW-28 Section H permit. The deliverables are due today. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462

8/31/2006

E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

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

(Pollution Prevention Guidance is under "Publications")

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**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 31, 2006 1:12 PM  
**To:** 'Moore, Darrell'  
**Subject:** Discharge Permit Fees for Navajo Artesia & Lovington Facilities

Darrell:

Hey. I am in receipt of two checks each in the amount of \$100 for the filing fees for the Navajo Lovington Refinery (GW-14) and the Navajo Artesia Refinery (GW-28). Per Section 20.6.2.3114 (1)(A) Table 1 (see renewal fee at [http://www.nmenv.state.nm.us/NMED\\_Regs/gwb/20\\_6\\_2\\_NMAC.pdf](http://www.nmenv.state.nm.us/NMED_Regs/gwb/20_6_2_NMAC.pdf)), you appear to be shy \$8,400 for each facility and/or a total amount of \$16,800 for the permit renewal.

In addition, the OCD is awaiting the deliverables from your July 25, 2006 letter addressing the GW-28 Section H permit. The deliverables are due today. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/oed/>  
(Pollution Prevention Guidance is under "Publications")

8/31/2006





BILL RICHARDSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*  
*Telephone (505) 428-2500*  
*Fax (505) 428-2567*  
*www.nmenv.state.nm.us*



RON CURRY  
SECRETARY

DERRITH WATCHMAN-MOORE  
DEPUTY SECRETARY

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

August 22, 2006

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

**SUBJECT: GROUP 2 SWMU/AOC INVESTIGATION WORK PLAN (OLD API  
SEPARATOR, SOUTH API SEPARATOR, SOUTHWEST TANK FARM,  
AND CRUDE TANK FARM)  
NAVAJO REFINING COMPANY, ARTESIA REFINERY  
EPA ID NO. NMD048918817  
HWB-NRC-MISC**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) granted a time extension for the submittal of the *Group 2 SWMU/AOC Workplan* (Old API Separator, South API Separator, Southwest Tank Farm, and Crude Tank Farm) in a letter dated January 11, 2006. In the letter, NMED stated that the due date for the work plan would be established by NMED upon review of the Group 1 SWMU/AOC Corrective Action Investigation Report to allow for inclusion of any necessary changes to the approach used during the Group 1 SWMU/AOC investigation.

NMED had reviewed the Group 1 SWMU/AOC Investigation Report and has determined that the approach used for the Group 1 investigation is appropriate for the Group 2 site investigation. Navajo Refining Company (the Permittee) must submit the *Group 2 SWMU/AOC Workplan* to NMED on or before December 29, 2006. NMED approves the use of soil and gas survey methods to be utilized in conjunction with subsurface soil borings, and monitoring well installation for the Group 2 investigations.

Navajo Refining Company  
August 22, 2006  
Page 2

Please call this office at 505-428-2545 if you have questions regarding this letter.

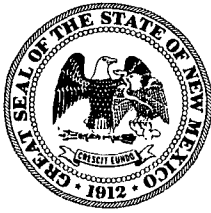
Sincerely,



Hope Monzeglio  
Project Leader  
Permits Management Program

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
C. Frischkorn, NMED HWB  
D. Whaley, Navajo Refining Company  
S. Hall, ARCADIS G&M, Inc.  
L. King, EPA Region 6 (6PD-N)

File: Reading File and NRC 2006 File  
HWB-NRC-MISC



**BILL RICHARDSON**  
GOVERNOR

**State of New Mexico**  
**ENVIRONMENT DEPARTMENT**

**Hazardous Waste Bureau**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, New Mexico 87505-6303**  
**Telephone (505) 428-2500**  
**Fax (505) 428-2567**  
**[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)**



**RON CURRY**  
SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

August 17, 2006

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

**SUBJECT: NOTICE OF DEFICIENCY**  
**GROUNDWATER MONITORING WORK PLAN**  
**NAVAJO REFINING COMPANY, ARTESIA REFINERY**  
**EPA ID No. NMD048918817**  
**HWB-NRC-05-001**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its technical review of the Navajo Refining Company, Artesia Refinery's (the Permittee) *Groundwater Monitoring Work Plan* (Work Plan) dated June 30, 2006. NMED hereby issues this Notice of Deficiency (NOD). The Permittee must address all comments contained in this NOD and submit a revised Groundwater Monitoring Work Plan no later than October 2, 2006. The revised Work Plan must be accompanied with a response letter that explains where all revisions have been made, cross-referencing NMED's numbered comments. The Permittee must proceed with the fall groundwater monitoring event in accordance with the schedule found in Table I.

**Comment 1**

The purpose of a work plan is to provide details regarding specific proposed activities that will occur during groundwater monitoring events. The Work Plan must be clear and concise so that a person not familiar with the refinery could execute the groundwater monitoring activities based on the Work Plan. Many sections of the Work Plan are too vague which is explained further in this NOD.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 2 of 4

**Comment 2**

The Permittee must define all acronyms within the report or provide an acronym page. The Permittee must also identify what Attachments I and II are in the Table of Contents.

**Comment 3**

The Permittee must expand Section 1.0 (Introduction) to include a brief description of the purpose and objectives for conducting groundwater monitoring at the refinery. For example, groundwater monitoring occurs at the facility to track plume migration and changes of petroleum hydrocarbons at the refinery, to help identify migration pathways, and to ensure contamination is not migrating offsite.

**Comment 4**

The Permittee must expand Section 2.0 (Background) to include:

- a. a statement that the current groundwater monitoring plan has been revised into one work plan containing requirements established by the NMED and the Oil Conservation Division (OCD), and
- b. a description of areas and or specific locations of groundwater contamination, including possible and known sources and potential receptors.

**Comment 5**

The Permittee must expand Section 3.0 (Site Conditions) to address site topography, soil types, site geology, and hydrogeologic conditions etc., at the site. The Permittee should refer to the SWMU/AOC Group 1 Corrective Action Investigation Work Plan "Site Conditions" Section.

**Comment 6**

The Permittee must revise Section 4.0 (Investigation Methods) to include the names of the instruments being utilized (e.g. what type/brand of inline meter) and descriptions of instrument calibration procedures. The Permittee must add to this section applicable information provided in Appendix C and Appendix D of the Post Closure Care Permit (Permit).

The Permittee must revise Section 5.0 (Monitoring and Sampling Program and Schedules) to include applicable information found Appendix C and Appendix D of the Permit (e.g. decontamination procedures, sampling equipment, preservation methods, chain of custody, field equipment calibration, collection and management of investigation derived waste and documentation).

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 3 of 4

**Comment 7**

The Permittee must revise Figure 1 of Attachment 2 so the well names and other identification labels are legible by increasing the font size. See Comment 9b.

**Comment 8**

In Section 5.2, the Permittee addresses the reporting requirement of the annual report, submitted to NMED by February 28<sup>th</sup> of each year. This Section does not need to be revised; however, the annual groundwater monitoring report must comply with the reporting requirements found in the August 2006 NOD regarding the 2005 Annual Groundwater Report.

**Comment 9**

The Permittee did not address all submittal requirements for the Work Plan established in the March 6, 2006 letter titled *Approval with Modifications Groundwater Monitoring Replacement Work Plan*. The Permittee must provide the following, either in the Work Plan or as a response:

- a. Drilling logs and well construction diagrams in accordance with the Permit, Section 4.7.6.a.
- b. Any figures that contain monitoring well name changes as a result of the combination of maps must include the original well name in parentheses below the newly assigned name. An explanation of well name in parentheses must be provided in the legend. The name changes must be addressed in the Work Plan narrative.
- c. Sampling requirements outlined in Appendix C (Sampling Methods and Procedures) and Appendix D (Chemical Analytical Procedures) of the Permit. See Comment No. 6.
- d. Procedures for the management of investigation derived waste. See Comment No. 6.
- e. Procedures to measure the depth to water (DTW) and depth to product (DTP), if present, in all monitoring and recovery wells during each sampling event, regardless of whether or not samples are collected from the wells. All measurements shall measure to the nearest 0.01 foot. The Permittee need not collect samples for chemical analysis from wells containing separate phase hydrocarbons (SPH). This must be included in Section 5.0 (Monitoring and Sampling Program and Schedules) of the revised Work Plan.

Mr. Darrell Moore

Navajo Refining Company

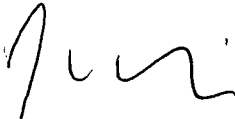
August 17, 2006

Page 4 of 4

2006 AUG 23 AM 11 55

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



James P. Bearzi

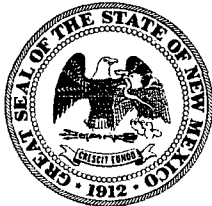
Chief

Hazardous Waste Bureau

JPB:hm

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
C. Frischkorn, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
D. Whaley, NRC  
J. Byrd, NRC

File: Reading File and NRC 2006  
HWB-NRC-05-001



**BILL RICHARDSON**  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*  
*Telephone (505) 428-2500*  
*Fax (505) 428-2567*  
*www.nmenv.state.nm.us*



**RON CURRY**  
SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

August 17, 2006

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

**SUBJECT: NOTICE OF DEFICIENCY**  
**2005 ANNUAL GROUNDWATER REPORT**  
**NAVAJO REFINING COMPANY, ARTESIA REFINERY**  
**EPA ID No. NMD048918817**  
**HWB-NRC-06-001**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its technical review of the Navajo Refining Company, Artesia Refinery's (the Permittee) *2005 Annual Groundwater Report* (the Report) in accordance with 20.4.2.200.A(7)NMAC. NMED hereby issues this Notice of Deficiency (NOD); revisions are necessary before NMED can consider its approval. NMED provides the following comments.

**Comment 1**

All groundwater analytical results must be compared to the standards established in the Permit (Section 4.6.1.b.a.i.(b) (Corrective Action for Groundwater)). The Permittee must compare site specific groundwater data to the lower of the New Mexico Water Quality Control Commission (WQCC) standards and the Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs). The EPA Region VI Human Health Medium-Specific Screening Levels (Region VI) for Tap Water shall be applied for those constituents where a MCL or WQCC standard has not been established. The Permittee must revise the Report accordingly.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 2 of 9

**Comment 2**

The Permittee must compare detected contaminant concentrations in groundwater to the applicable cleanup standards (WQCCs, MCLs, and Region VI Tap Water Screening Levels). All detections must be included in the tables. Any concentration exceeding the cleanup standards or screening standards must be highlighted. All summary tables presenting analytical data must include the detection limits indicated in the laboratory reports (e.g., <10) in lieu of presenting the detection limit as non-detect (ND) or below the detection limit (BDL). The report should include a section discussing any exceedances of the cleanup standards and address any laboratory data quality exceptions or elevated detection limits. The Permittee must also define any acronyms and include any other applicable notations in the summary tables. The Permittee must include this in the revised Report.

**Comment 3**

Section 2.0 (Recovery Wells), the first sentence identifies the approximate volume of water and product pumped out of the recovery wells.

It would be unlikely that for two years the facility removed the same volumes of water and product from the recovery wells. The Permittee must provide the correct volume of water and product pumped out of the recovery wells for 2005 in the Revised Report because the volumes listed are the same as the volumes provided in the 2004 Annual Groundwater Monitoring Report.

**Comment 4**

The Permittee states in many sections of the Report that metal and anion concentrations detected above WQCC standards are naturally occurring. Specifically, Section 3.0 states "...these analytes are naturally occurring at these levels and are not a result of our contamination."

This assertion must be supported with a demonstration that metal and anion concentrations detected at the facility are naturally occurring and are a result of background concentrations. To date, the Permittee has not established NMED-approved background concentrations in groundwater at the facility. Background concentrations for groundwater must be determined from upgradient wells representative of natural conditions unaffected by site or other activities that may affect metals concentrations. To assert that metal and anion concentrations are naturally occurring, the Permittee must use NMED's guidance document *Determination of Background*, provided as Attachment 1, or propose an alternate approach to determine background concentrations at the facility. The Permittee must revise the Report to remove references to metal and anion concentrations that exceed WQCC standards as naturally occurring and either follow NMED guidance document *Determination of Background*, or propose an alternate method for determining background concentrations for metals and anions. The response letter must identify which course of action the Permittee proposes to take to determine background concentrations.



Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 3 of 9

**Comment 5**

Section 1.0 (Summary) provides a limited summary that addresses the removal of separated phase hydrocarbons (SPH) and monitoring related to the recovery wells. It does not summarize facility wide groundwater monitoring activities that occurred during the year. The Permittee must revise the Report to include a section that summarizes all monitoring activities conducted during the year. The reporting format for this summary can be found in Appendix E.4 of the Permit.

**Comment 6**

The Permittee does not make reference to recovery wells (RW) RW-5, RW-6, or RW-15 in Section 2.0 (Recovery Wells).

The Permittee must revise the Report to include the status of all recovery wells, including recovery wells RW-5, RW-6, and RW-15 (e.g. are they operating, contain product.) If specific recovery wells were not sampled or inspected during a monitoring event, then an explanation must be included in the Report. The Permittee must also revise Table 2-1 to include recovery wells RW-5, RW-6, and RW-15.

**Comment 7**

Section 2.0 (Recovery Well) states, "Recovery wells 1, 2, 3, 7, 8, 9, 10, 11, 12, 16, 17, and 18 are included in this table, even though they are currently only used for monitoring. The wells are monitored on a weekly basis and sampled annually."

Email correspondence between the Permittee and NMED on April 4, 2006, states "...these recovery wells were not installed to be sampling points. We have monitor wells in the vicinity of these recovery wells that were installed to be sampled and that you are having us sample."

The Permittee must define "monitoring" versus "sampling" as stated in Section 2.0, page 2, paragraph 2 of the Report and the email correspondence dated April 4, 2006.

**Comment 8**

The Permittee states in Section 2.0, (Recovery Wells) "[m]ost of the trenches (RW's 1, 2, 3, 4, 7, 9, 10, 11, 12, 13, 16, 17, and 18) were shut down for most of 2005 or earlier because there was not any product in them to recover."

During an April 11, 2006 conference call between NMED, the Oil Conservation Division (OCD), and the Permittee, the Permittee indicated that approximately 100 barrels (primarily gasoline) was being recovered from RW-4 every 3 months. The Permittee must identify the time period during which RW-4 was put back into service. If this occurred during 2005, the Permittee must revise Table 2-1 Recovery Well Production to include the volume of product recovered from

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 4 of 9

RW-4.

**Comment 9**

The first paragraph of Section 3.0 (Semi Annual and Annual) refers to offsite wells. The Permittee must revise the Report to identify these offsite wells.

**Comment 10**

The second paragraph of Section 3.0 (Semi Annual and Annual) discusses RW-2 samples having a benzene concentration of 13,000 parts per million (ppm) and has historically contained separate phase hydrocarbons (SPH) that were aggressively removed. The last sentence of the paragraph states "However, 13,000 ppm is not indicative of a hydrocarbon plume."

It is probable that the benzene concentration of 13,000 ppm is part of or the result of a hydrocarbon plume. Statements presented in the Report must not draw conclusions without support.

**Comment 11**

The Permittee states in the third paragraph of Section 3.0 (Semi Annual and Annual) that the benzene concentration in MW-57 was 9,700 ppm. However, the Permittee states in Section 2.0, paragraph 2 that benzene was detected at a concentration of 4,800 µg/L in MW-57.

The Permittee must revise Sections 3.0 and 2.0 to contain the correct concentrations of benzene detected in MW-57 and using the correct units.

**Comment 12**

The Permittee states in Section 3.0 that the analytical data is found in Attachment B; however, the laboratory report for MW-57 was not found in Attachment B. The revised Report must contain all analytical data for all wells sampled in the locations identified in the Report.

**Comment 13**

The sixth paragraph of Section 3.0 (Semi Annual and Annual) makes reference to COC.

The Permittee must define COC in the revised report. All acronyms must either be defined within the report or the Permittee must include an acronym list in the report.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 5 of 9

**Comment 14**

Table 3-1 (Annual and Semi-Annual Analysis Results) contains the acronym BDL. Some data are presented in bold type.

The revised Report must ensure the "notes" section included with the tables are included on every table. The purpose of bolded data must also be explained. This comment applies to all tables within the Report.

**Comment 15**

Table 3-1 (Annual and Semi-Annual Analysis Results) contains data for constituents that have concentrations detected above WQCC standards. However, naphthalene was detected at a concentration of 36 µg/l or 0.036 mg/l in samples collected from MW-58 which is at the WQCC standard of naphthalene of 0.03 mg/l. Naphthalene was not found in Table 3-1. (This also applies to other wells such as RW-2) All tables within the Report must be revised to include and highlight all detected concentrations at or above the applicable standards.

**Comment 16**

Table 3-1 (Annual and Semi-Annual Analysis Results) displays the xylene concentration for RW-1 as 180 µg/l.

The laboratory results for RW-1 show total xylenes at a concentration of 230 µg/l and "m,p xylenes" at a concentration of 180 µg/l. The Permittee must revise all tables in the Report to report total xylene concentrations since the cleanup standards are established for total xylenes.

**Comment 17**

Tetrachloroethene (PCE) was detected above both the WQCC standard (20 µg/l) and the MCL (5 µg/l) in RW-1 and RW-2 at concentrations of 77 µg/L and 84 µg/L, respectively. These detections were not provided in the tables. The Permittee must revise the tables in the Report to include all PCE detections.

**Comment 18**

The Permittee states in the second paragraph of Section 4.0 (NCL/TEL) "It is believed that they [metal concentrations] are naturally occurring levels because the concentration is not statistically different between the wells or past analysis results, as can be seen in the Table."

The Permittee must provide the statistical tests and calculations used to determine that metals concentrations are not statistically different between the wells in the revised report. See Comment No. 4

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 6 of 9

**Comment 19**

The Permittee states in the third paragraph of Section 4.0 (NCL/TEL) "Monitoring wells TEL-2 and TEL-3 have both been declining over the last several years..."

The Permittee must revise this sentence to clarify what has been declining.

**Comment 20**

Tables 4-1 – 4.4 (Summary of Field Observations): The Permittee must revise the tables to address the comments below.

- a. The column titled TD must be defined either in the column or in an area in the table. DO, ORP, Corr. and any other abbreviations must be defined in the tables as well.
- b. All columns in the tables must contain units as appropriate (e.g., temperature: Fahrenheit or Celsius, well volume in gallons).
- c. The negative values and numbers higher than 9.8 in the dissolved oxygen (DO) column are likely inaccurate as DO at sea level is 9.8 mg/L under saturated conditions. The Permittee must provide an explanation for the anomalous values. The Permittee must also explain how the data were derived as a percentage. The Permittee shall continue to provide notations that identify instrument inaccuracies and corrective actions, if taken, as they arise (e.g., "Meter appeared to be reading improperly").

**Comment 21**

The Permittee states in Section 5.0 (Evaporation Ponds) that "TABLE 5-1 contains the analytical results for the last four years of sampling events for this set of wells." The paragraph further states that concentrations of metals and ions occurring above WQCC standards are consistent between the wells and are assumed to be naturally occurring.

Consistent detections of metals between wells does not necessarily reflect background conditions. The Refinery has been in operation since the 1920s, a background study for groundwater has not been performed, and there is no supporting evidence that the consistent metal detections are not a result of historical refinery operations. The Permittee must revise the report to identify the set of wells referred to in this section. Refer to Comment No. 5 to address the statement on naturally occurring metals concentrations.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 7 of 9

**Comment 22**

Section 5.0 (Evaporation Pond) states Figure 3-1 contains the combined groundwater gradient map for the evaporation ponds and the refinery.

Figure 3-1 must be revised to include the contour intervals in the legend of the map. All figures containing contours lines must contain the contour interval in the legend of the map.

**Comment 23**

The Permittee states in Section 6.0 (Reverse Osmosis Reject Water) that a table is not provided for the analytical results of the Reverse Osmosis Reject Water because there were no chemicals of concern detected above WQCC standards. The Permittee states in the following sentence of the Report that sulfate was found to be above the WQCC standard.

The Permittee must resolve this discrepancy.

In addition, the Permittee must present all data detections in summary tables regardless if the constituent concentrations are above or below WQCC standards. All constituents detected above WQCC standards must be highlighted in the tables as well. See Comment No. 2

**Comment 24**

Attachment A (Quarterly Recovery Wells Oil Data and Recovery Wells H2O Data) tables must:

- a. Clarify the well type in the "well #" column (e.g., recovery well, monitoring well),
- b. Define "GPM," "GPD," and "Rding" in the table, and
- c. Provide a description for the meaning of old and new "rdings", and oil output in the "Notes" section of the tables.

**Comment 25**

Groundwater elevation tables must be provided for all monitoring and recovery wells. The information provided in the tables must contain the date of measurement, well identification, well casing elevation, total depth of the well, depth to separate phase hydrocarbons (SPH), SPH thickness, depth to water, and groundwater elevation (corrected water table elevation if SPH are present). These tables must be provided in the revised report.

**Comment 26**

Appendix F contains the analytical laboratory reports for water samples collected from the Irrigations Wells. Irrigation well RA 4798 had a detected concentration of methyl tertiary-butyl ether (MTBE). The Permittee must submit the well construction diagram and boring log for irrigation well RA 4798 to NMED in conjunction with the submittal of the Revised Report.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 8 of 9

**Comment 27**

Not all wells identified for groundwater monitoring in the Permit were sampled. Due to variations between NMED's and OCD groundwater monitoring plans, there may have been confusion as to which monitoring wells should be sampled. This issue was remedied with the June 1, 2006 letter containing a revised groundwater monitoring plan containing a list of wells to be monitored and sampled, that was agreed upon by all parties. The Permittee should request a Class II Permit Modification to replace the requirements in the Permit with the groundwater monitoring plan.

**Comment 28**

The Report does not follow the reporting requirements and format established in Appendix E of the Post-Closure Care Permit (Permit). The Permittee must revise the Report to follow the Periodic Monitoring Report format specified in Appendix E.4 of the Permit.

**Comment 29**

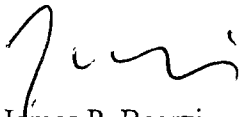
The Sections in Volume I of the Report do not follow what is presented in the Table of Contents. The sections are intermixed (e.g., Figures 3-1 through 3-4 are found at the back of the Report and not in Section 3.0 and extra attachment cover sheets are found subsequent to Section 7.1). The Permittee must revise the Report so the contents of the report match the Table of Contents.

Mr. Darrell Moore  
Navajo Refining Company  
August 17, 2006  
Page 9 of 9

The Permittee must address all comments contained in this NOD and submit a revised Report. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. All requirements must be addressed in future groundwater monitoring reports. The revised report must be submitted to NMED no later than November 30, 2006.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

JPB:hm

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
C. Frischkorn, NMED HWB  
H. Monzeglio, NMED HWB  
W. Price, OCD  
D. Whaley, NRC  
J. Byrd, NRC  
L. King, EPA Region 6 (6PD-N)

File: Reading File and NRC 2006  
HWB-NRC-06-001

Attachment 1



## DETERMINATION OF BACKGROUND

The Permittee shall determine an appropriate background data set for inorganic constituents at the Facility. The Permittee shall determine whether one or more background data sets are appropriate based on variations in soil type and geology at the site. Background concentrations for groundwater shall be collected from upgradient wells. The background data sets shall be representative of natural conditions unaffected by site activities and shall be statistically defensible. Sufficient number of background samples shall be collected for use in the risk assessment, including conducting site attribution analyses and comparison of data sets.

The Respondents shall provide summary statistics for background metals concentrations in each medium of concern and include the following information:

1. Number of detects,
2. Total number of samples,
3. Frequency of detection,
4. Minimum detected concentration,
5. Maximum detected concentration,
6. Minimum sample quantitation limit (SQL),
7. Maximum SQL,
8. Arithmetic mean,
9. Median,
10. Standard deviation, and
11. Coefficient of variation.

The Permittee shall determine the 95% upper tolerance limit (UTL) for each metal using statistical methods that are distribution based.

## **Comparing Site Data to Background**

The 95% UTL for each metal shall be used as the background reference value for use in screening assessments and determining whether metals are present in soil, groundwater, surface water, or sediment due to Facility activities. The site maximum detected concentration shall be compared to the 95% UTL for each metal. If the site maximum detected concentration is greater than the background reference value, then additional site attribution analyses shall be conducted.

Site attribution analyses shall be conducted in accordance with current EPA or Department-accepted guidance. The site attribution analyses shall consist of a statistical comparison of the background data set to the site data set, using distribution based tests such as the Wilcoxon Rank Sum Test.

If the results of the site attribution analyses indicate that the metal is present at the site above naturally occurring levels, then the Permittee shall include metal as a site contaminant.

**Chavez, Carl J, EMNRD**

**From:** Monzeglio, Hope, NMENV  
**Sent:** Tuesday, August 15, 2006 4:15 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** FW: Monitoring well information

Wayne and Carl

Below is the information for groundwater and product level measurements at Navajo near Bolton Road and US 82.

Let me know if you have any questions.

Hope

---

**From:** Byrd, Jeff [mailto:Jeff.Byrd@hollycorp.com]  
**Sent:** Tuesday, August 15, 2006 1:18 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Moore, Darrell  
**Subject:** Monitoring well information

Hope;

Here are the depth to fluid and depth to bottom measurements collected in April 2006.

	DTF <sup>1</sup>	DTB <sup>2</sup>
KWB-5	24.03	37.6
KWB-6	22.96/24.94 <sup>3</sup>	
KWB-7	24.32	37.5
KWB-8	24.16/27.08 <sup>3</sup>	
KWB-9	28.32	37.9
KWB-10	17.95	37.0
KWB-11A	23.8	36.1
KWB-12A	Dry	25.1
KWB-12B	26.68	29.4
MW-57	23.71/23.72 <sup>3</sup>	
MW-58	22.14	33.0
NP-1	14.48	21.8
NP-2	11.96	21.5
RW-11	Dry	23.7
RW-12	Dry	23.8
RW-13	23.6	26.8
RW-14	20.3	23.5

- <sup>1</sup> Depth to Fluid  
<sup>2</sup> Depth to Bottom  
<sup>3</sup> "Depth to Fluid"/"Depth to Water" - Depth to bottom not obtained on these wells to help prevent cross contamination.

Let me know if you have any further questions

Jefferson L. Byrd  
 Sr. Environmental Specialist  
 Navajo Refining - Environmental Department  
 Artesia New Mexico  
 Office - 505-746-5468  
 Cell - 505-703-5068

8/15/2006



**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, August 14, 2006 1:30 PM  
**To:** 'Moore, Darrell'  
**Cc:** Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Discharge Permit & Section H Additional Requirements

Darrell:

Re: OCD response to July 25, 2006 Navajo- Artesia Letter

The Oil Conservation Division (OCD) in cooperation with the New Mexico Environment Department (NMED) (the agencies) have reviewed Navajo- Artesia's letter and have the following comments and/or recommendations on Navajo's response to the OCD letter to Navajo- Artesia dated March 3, 2006.

The agencies comments and/or recommendations are as follows:

- i. We agree and expect that the map will reflect changes to well names as appropriate and all features mentioned by Navajo to be received by August 31, 2006.
  - ii. The agencies are not sure how Navajo will delineate this area, but investigation work between MW-52 and KWB-2R (mid-point) and between the midpoint and KWB-4 may help to determine whether the plume is bracketed and remains north of US-82 and whether an additional recovery well(s) is needed in this area. The agencies will see how Navajo delineated this area in its August 31, 2006 report. OCD will likely include a provision to continue this investigation in the updated discharge plan permit.
  - iii. Item i. above should address the nomenclature change.
  - iv. Navajo has not adequately addressed this item. This item specifies that if PSH are found east of the Bolton Road recovery system, then a new recovery system shall be installed in this area including down gradient monitor wells. Since KWB-8 is east of the recovery system, and contains free-product and the well spacing between KWB-7, 8 and 11A is vast, Navajo needs to address this item. The OCD will likely include it in the discharge plan.
  - v. Regarding Navajo's proposal to install a well across from Bolton Road Trench #2 to detect hydrocarbons that may be flowing under and past this trench by September 30, 2006. A monitor well approximately 500 ft. east of MW-57 would help to monitor plume migration and the type of organic contaminants that may be present. The source of contamination detected at MW-57 may be associated with nearby pipelines. Navajo should contact "One Call" to assess potential pipeline leaks in the area. In addition, there are concerns about the potential shallow depth of recovery trenches relative to the actual depth to the water table. The agencies recommend that Navajo conduct quarterly static water level monitoring well and recovery well water table elevations (msl) in the vicinity of Bolton Road (M. Chase Property and surrounding area) to assess whether recovery well trench depth relative to the water table is adequate.
- Navajo proposes with OCD approval to emplace a bank of recovery wells along Bolton Road in tandem with MW-57 with some investigation to determine each well's radius of influence and use the distance to space more wells and continue digging wells until out of contamination. The agencies agree in concept; however, recommend wells be emplaced along the south side of US Hwy. 82 (west of RW-11 as opposed to along Bolton Road in tandem southward from MW-57).
- vi. The agencies agree that no additional investigation is needed between RW-5, RW-10 and the refinery.

8/14/2006

vii. Navajo has addressed this item.

viii. Navajo continues to address this item.

ix. Navajo continues to address this item.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/oed/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Tuesday, July 25, 2006 8:26 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Discharge permit

Carl,

Here are our responses to your letter. Hard copy to follow.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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8/14/2006

**Chavez, Carl J, EMNRD**

---

**From:** Moore, Darrell [Darrell.Moore@hollycorp.com]  
**Sent:** Thursday, August 10, 2006 8:47 AM  
**To:** Price, Wayne, EMNRD  
**Cc:** Chavez, Carl J, EMNRD  
**Subject:** Hydrotest of Effluent Pipeline to Injection wells

We will be hydrotesting the effluent pipeline to the injection wells starting on August 15, 2006 at 6 am and continuing until finished. It will be tested in 3 sections. If OCD wants to witness any or all testing, you can contact me at 505-703-5058 and we will be glad to arrange that.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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## REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

July 25, 2006

Mr. Carl Chavez  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RE: Discharge Permit GW-028 Artesia Refinery

Dear Mr. Chavez,

Navajo Refining Company is in receipt of your March 3, 2006 letter detailing requirements for the renewal of our discharge permit. I would like to take this opportunity to address each of the requirements in your section H.

- i. Up-date all on-site and off-site maps, showing the current status of all recovery/monitor/domestic, irrigation wells and pertinent features including the storm water basins. **In our recent groundwater review with NMED and OCD, an updated map of the refinery was drafted and sent to both NMED and OCD. Navajo will add the stormwater basins to this map and update the status of any new wells. This map will be sent to OCD by August 31, 2006.**
- ii. Navajo shall investigate the area between monitor well KWB-2R and the refinery to determine if a new remediation recovery trench system is required in this area. **When the recovery trench was installed on the Tool Pushers property (RW-15) there was some boring done to determine how far south to go with the trench. The trench stopped at the southern edge of contamination. MW-48 which is just west of the trench has no free product in it. We can do some delineation along US 82 and in a few other places along this area. However, a recovery trench in this area is not feasible. Other forms of remediation may be needed. Navajo will delineate this area by August 31, 2006.**
- iii. Replace MW-1 at the Evaporation Ponds. **This well has been replaced. On the above mentioned map, it is labeled MW-1R.**



- iv. If phase separated hydrocarbons are found east of the Bolton Road recovery system, then a new recovery system shall be installed in this area including downgradient monitor wells. Any wells that reveal contaminants that exceed WQCC groundwater standards shall be reason to install additional wells to determine the extent of contamination. All new wells shall be added to the maps and included in the annual report. **When the Bolton Road recovery system was installed in 1992, a portion of the targeted plume was already past the trenches. OCD was notified of that and it was mutually agreed that the best place for the trench was along Bolton Road and to allow the "escaped" plume to continue downgradient as the source was cut and existing monitor wells in the orchard would detect product migration. At that time, Mack Chase would not allow us to dig up his pecan orchard to place the trenches in front of the plume. It is our belief that Mr. Chase will be even more adamant against that prospect now with the presence of mature, producing trees. When the trenches were installed, monitor wells KWB-8, KWB-7 and KWB-11A were put in place downgradient to monitor the progress of the plume with the idea that as the plume impacted those wells, we would start recovering product using portable pumps. To date, KWB-8 is the only one of these wells that we have had to recover product from. KWB-7 and KWB-11A have dissolved phase in them but no free phase. The status of these wells and the amount of product recovered is reported in the annual report that we send to OCD. Therefore, Navajo proposes not to install any more additional wells or any new recovery system.**
- v. Bolton Road recovery trench #1 and #2 were noted to be dry. OCD is concerned that contaminants may be flowing under and past these trenches. Please modify these trenches or install monitor wells directly east of these devices by November 15, 2003. **In response to this request, Navajo installed MW-57 just across from Bolton Road Trench #1 in 2003. That well in fact does have a 0.01 inch layer of free phase hydrocarbons in it and we have been reporting the amounts recovered in the annual report that is sent to OCD. KWB-9, just south of MW-57 is clean. We have no monitor wells directly across from Bolton Road Trench #2. However, we can install a well across Bolton Road Trench #2 to detect any hydrocarbons that may be flowing under and past this trench. Modifying the trench system itself is not feasible since the trenches are already 30' deep. This is about the limit that can be dug. The area east of the trench system is farm land and the owners are not likely to allow a trench system in their farm. Navajo would instead recommend that a bank of recovery wells be placed along Bolton Road in tandem with MW-57. We would do some investigation to determine each well's radius of influence, then use that distance to space more wells and continue digging wells until we get out of contamination. Upon timely approval by OCD, Navajo can have this**

**bank of wells along with the well across from Bolton Road Trench #2 installed by September 30, 2006.**

- vi. Navajo shall investigate the area between RW-10 and RW-5 and the refinery to determine if a new remediation recovery trench system is required in this area. The results of this investigation shall be submitted to OCD by November 15, 2003. **As part of an OCD initiated effort, MW - 49 was installed in 2003. That well has no free phase hydrocarbons to this point. As part of the ongoing NMED Post Closure investigation, MW-59 and MW-60 were drilled in the boneyard area just southeast of RW-10. These wells have no free phase hydrocarbons as of June 2006. Therefore, Navajo feels no additional investigation in this area is needed.**
- vii. Navajo shall install an additional monitor well northeast of MW-45. OCD is concerned about contamination migrating off of Navajo property in this area by November 15, 2003. **NP-9 was installed northeast of MW-45. It is clean as our annual reports to OCD show.**
- viii. Navajo shall notify the OCD Santa Fe and district office at least 2 weeks in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples. For large facilities, i.e. refineries, an annual notification will suffice. **Navajo will notify OCD.**
- ix. Navajo shall notify the NMOCD of the discovery of separated-phase hydrocarbons or the exceedance of a WQCC standard in any down gradient monitor well where separated-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards during the preceding monitoring event pursuant to NMOCD Rule 116. **Navajo has and will continue to comply.**

I hope these responses will move this discharge permit forward. If you have any questions or concerns, please do not hesitate to contact me at 505-746-5281 or at my e mail address [darrell.moore@navajo-refining.com](mailto:darrell.moore@navajo-refining.com).

Sincerely,  
**NAVAJO REFINING CVOMPANY**



**Darrell Moore**  
**Environmental Manager for Water and Waste**

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, July 07, 2006 8:39 AM  
**To:** Price, Wayne, EMNRD  
**Cc:** Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; 'Moore, Darrell'  
**Subject:** FW: Navajo Artesia NPDES Permit to Not Discharge

Wayne:

I contacted Larry Giglio of EPA about the NPDES Permit. The permit does not authorize Navajo to discharge. It is illegal to discharge under the permit- even discharges associated w/ emergencies. The permit requires Navajo to abide by all provisions of the permit including the submittal of DMRs (discharge or NO discharge). Can't stop Navajo from discharging, but if they do, the permit lays out the monitoring requirements after a discharge occurs and there will be penalties. Also, should Navajo forget to reapply in 5 years, there could be a \$50,000 fine.

Larry said that they should have denied the application, but it would have required a significant amount of work, i.e; filing public notice, etc. Navajo Artesia can get out of the permit by sending a letter and withdrawing the permit application to EPA. The EPA expects to receive the first DMR (discharge or no discharge) from Navajo by around October 28, 2006. Navajo must comply with all other provisions of the permit until they send a letter withdrawing their permit application.

Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, July 07, 2006 8:09 AM  
**To:** 'giglio.larry@epa.gov'  
**Subject:** Navajo Artesia NPDES Permit to Not Discharge

Larry:

Good morning. The Oil Conservation Division has reviewed the permit for the above facility in New Mexico and have a few questions. It seems that Navajo cannot discharge RO water to the Pecos River, but if they do discharge, they are limited to about 207 gpm with monitoring requirements.

Has Navajo's NPDES Permit Application to discharge been denied by the EPA? Is Navajo allowed to discharge RO water to the Pecos River at all or in cases of emergency? We are a little confused by the "Not to Discharge," but then there are monitoring provisions in the permit if they do discharge.

Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462

7/7/2006

E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

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

(Pollution Prevention Guidance is under "Publications")

FILE  
with permit

**Price, Wayne, EMNRD**

---

**From:** Price, Wayne, EMNRD  
**Sent:** Friday, July 07, 2006 8:25 AM  
**To:** Cobrain, Dave, NMENV  
**Cc:** Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV  
**Subject:** FW: Navajo Refinery NPDES Permit Issued by EPA

---

**From:** Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]  
**Sent:** Friday, July 07, 2006 7:59 AM  
**To:** Price, Wayne, EMNRD  
**Subject:** RE: Navajo Refinery NPDES Permit Issued by EPA

Wayne,

In answer to your question.....NO...we will not be discharging into the Pecos River. The "permit" is a permit to NOT discharge. They basically denied the request. I had never heard of a permit that "permitted you to NOT" do something. We called EPA and they gave us some mumbo jumbo about how issuing a permit to NOT discharge clears up their paper work

---

**From:** Price, Wayne, EMNRD [mailto:wayne.price@state.nm.us]  
**Sent:** Wednesday, July 05, 2006 4:54 PM  
**To:** Moore, Darrell  
**Subject:** FW: Navajo Refinery NPDES Permit Issued by EPA

Dear Darrell:

Would you please explain this permit to OCD. Will you be discharging into the Pecos river?

---

**From:** Saums, Glenn, NMENV  
**Sent:** Wednesday, July 05, 2006 2:56 PM  
**To:** Price, Wayne, EMNRD  
**Cc:** Powell, Richard, NMENV; Leavitt, Marcy, NMENV; Chavez, Carl J, EMNRD  
**Subject:** Navajo Refinery NPDES Permit Issued by EPA

FYI, see attached.

Glenn

Glenn Saums  
New Mexico Environment Dept.  
Surface Water Quality Bureau  
Point Source Regulation Section  
P.O. Box 26110  
Santa Fe, NM 87502-6110  
ph. (505) 827-2827  
fax. (505) 827-0160  
e-mail: [glenn.saums@state.nm.us](mailto:glenn.saums@state.nm.us)

7/7/2006

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REGION 6  
1445 ROSS AVENUE  
DALLAS, TEXAS 75202-2733

NPDES Permit No NM0030589

---

## AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"),

Navajo Refining Company  
501 East Main Street  
Artesia, NM 88211

is NOT authorized to discharge from a facility located on 501 East Main Street, Artesia, Eddy County, New Mexico,

to receiving waters named the Pecos River, in Segment No. 20.6.4.206 of the Pecos River Basin,

in accordance with this cover page and the effluent limitations, monitoring requirements, and other conditions set forth in Part I, Part II and Part III.

This is a first-time permit.

This permit shall become effective on August 1, 2006

This permit and the authorization to not discharge shall expire at midnight, July 31, 2011

Issued on June 26, 2006

Prepared by

Miguel I. Flores  
Director  
Water Quality Protection Division (6WQ)

Laurence E. Giglio  
Environmental Engineer  
Permits & Technical Section (6WQ-PP)

## PART I – REQUIREMENTS FOR NPDES PERMITS

## SECTION A. LIMITATIONS AND MONITORING REQUIREMENTS

## 1. FINAL Effluent Limits – 0.298 MGD

During the period beginning the effective date of the permit and lasting through the expiration date of the permit (unless otherwise noted), the permittee is NOT authorized to discharge reverse osmosis reject water to the Pecos River, in Segment Number 20.6.4.206, from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS		MONITORING REQUIREMENTS					
		Lbs/day, unless noted		mg/l unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	STORET CODE	MONTHLY AVG	DAILY MAX	MONTHLY AVG	DAILY MAX		
Flow	50050	N/A	N/A	***	***	Once/Day (*1)	Estimate

## Footnotes:

\*1 See Part II.A

## FLOATING SOLIDS, VISIBLE FOAM AND/OR OILS

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the discharge from the final treatment unit prior to the receiving stream.

## B. SCHEDULE OF COMPLIANCE

None, compliance with the terms and conditions of the permit shall start on the permit effective date.



C. MONITORING AND REPORTING (MINOR DISCHARGERS)

Monitoring information shall be on Discharge Monitoring Report Form(s) EPA 3320-1 as specified in Part III.D.4 of this permit and shall be submitted quarterly. Each quarterly submittal shall include separate forms for each month of the reporting period.

1. Reporting periods shall end on the last day of the months March, June, September, and December.
2. The permittee is required to submit regular monthly reports as described above postmarked no later than the 28<sup>th</sup> day of the month following each reporting period.
3. NO DISCHARGE REPORTING

If there is no discharge from any outfall during the sampling month, place an "X" in the NO DISCHARGE box located in the upper right corner of the Discharge Monitoring Report.

## PART II - OTHER CONDITIONS

## A. DISCHARGE REPORTING

Should any discharge occur, the discharge shall be sampled within one hour of beginning for the pollutants listed at 40 CFR 122, Appendix D, Tables III and IV, plus pH, hardness, TDS, and TSS and the results submitted to EPA and NMED/SWQB. Should the discharge continue for more than one day, additional samples and analyses results shall be submitted for each additional day.

## Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

<u>Pollutant</u>	<u>MQL</u> ug/l	<u>Pollutant</u>	<u>MQL</u> ug/l
Antimony, Total	60	Nickel, Total	40
Arsenic, Total	10	Selenium, Total	5
Beryllium, Total	5	Silver, Total	2
Cadmium, Total	1	Thallium, Total	10
Chromium, Total	10	Zinc, Total	20
Copper, Total	10	Cyanide, Total	10
Lead, Total	5	Phenols, Total	10
Mercury, Total	0.2		

## Conventional and Nonconventional Pollutants Required to Be Tested by Existing Dischargers if Expected to be Present

<u>Pollutant</u>	<u>MQL</u> ug/l	<u>Pollutant</u>	<u>MQL</u> ug/l
Chlorine, Total Residual	100	Barium, Total	100
Nitrate-Nitrite		Boron, Total	100
Nitrogen, Total Organic		Cobalt, Total	50
Radioactivity		Molybdenum, Total	10
Aluminum, Total	100		

**PART III - STANDARD CONDITIONS FOR NPDES PERMITS****A. GENERAL CONDITIONS****1. INTRODUCTION**

In accordance with the provisions of 40 CFR Part 122.41, et. seq., this permit incorporates by reference ALL conditions and requirements applicable to NPDES Permits set forth in the Clean Water Act, as amended, (hereinafter known as the "Act") as well as ALL applicable regulations.

**2. DUTY TO COMPLY**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

**3. TOXIC POLLUTANTS**

a. Notwithstanding Part III.A.5, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition.

b. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Act for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

**4. DUTY TO REAPPLY**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days

in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated at 40 CFR Part 122.6 and any subsequent amendments.

**5. PERMIT FLEXIBILITY**

This permit may be modified, revoked and reissued, or terminated for cause in accordance with 40 CFR 122.62-64. The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

**6. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

**7. DUTY TO PROVIDE INFORMATION**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

**8. CRIMINAL AND CIVIL LIABILITY**

Except as provided in permit conditions on "Bypassing" and "Upsets", nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of the permit, the Act, or applicable regulations, which avoids or effectively defeats the regulatory purpose of the Permit may subject the Permittee to criminal enforcement pursuant to 18 U.S.C. Section 1001.

**9. OIL AND HAZARDOUS SUBSTANCE LIABILITY**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to

which the permittee is or may be subject under Section 311 of the Act.

10. STATE LAWS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

11. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**B. PROPER OPERATION AND MAINTENANCE**

1. NEED TO HALT OR REDUCE NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators or retention of inadequately treated effluent.

2. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3. PROPER OPERATION AND MAINTENANCE

a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and

will achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

b. The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

4. BYPASS OF TREATMENT FACILITIES

a. BYPASS NOT EXCEEDING LIMITATIONS

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.b. and 4.c.

b. NOTICE

(1) ANTICIPATED BYPASS

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) UNANTICIPATED BYPASS

The permittee shall, within 24 hours, submit notice of an unanticipated bypass as required in Part III.D.7.

c. PROHIBITION OF BYPASS

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of

auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

(c) The permittee submitted notices as required by Part III.B.4.b.

(2) The Director may allow an anticipated bypass after considering its adverse effects, if the Director determines that it will meet the three conditions listed at Part III.B.4.c(1).

#### 5. UPSET CONDITIONS

##### a. EFFECT OF AN UPSET

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Part III.B.5.b. are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

##### b. CONDITIONS NECESSARY FOR A DEMONSTRATION OF UPSET

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee submitted notice of the upset as required by Part III.D.7; and,

(4) The permittee complied with any remedial measures required by Part III.B.2.

#### c. BURDEN OF PROOF

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### 6. REMOVED SUBSTANCES

Unless otherwise authorized, solids, sewage sludges, filter backwash, or other pollutants removed in the course of treatment or wastewater control shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

#### 7. PERCENT REMOVAL (PUBLICLY OWNED TREATMENT WORKS)

For publicly owned treatment works, the 30-day average (or Monthly Average) percent removal for Biochemical Oxygen Demand and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR 133.103.

### C. MONITORING AND RECORDS

#### 1. INSPECTION AND ENTRY

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by the law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

2. **REPRESENTATIVE SAMPLING**  
Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. **RETENTION OF RECORDS**  
The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.
4. **RECORD CONTENTS**  
Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The date(s) and time(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
5. **MONITORING PROCEDURES**
  - a. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator.
  - b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.
  - c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical

results shall be maintained by the permittee or designated commercial laboratory.

6. **FLOW MEASUREMENTS**  
Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

#### **D. REPORTING REQUIREMENTS**

1. **PLANNED CHANGES**
  - a. **INDUSTRIAL PERMITS**  
The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
    - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Part 122.29(b); or,
    - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements listed at Part III.D.10.a.
  - b. **MUNICIPAL PERMITS**  
Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges of pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that will cause violation of the effluent limitations specified herein.

2. **ANTICIPATED NONCOMPLIANCE**  
The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
3. **TRANSFERS**  
This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.
4. **DISCHARGE MONITORING REPORTS AND OTHER REPORTS**  
Monitoring results must be reported on Discharge Monitoring Report (DMR) Form EPA No. 3320-1 in accordance with the "General Instructions" provided on the form. The permittee shall submit the original DMR signed and certified as required by Part III.D.11 and all other reports required by Part III.D. to the EPA at the address below. DMR's and all other reports shall be submitted to EPA at the following address:
- EPA:  
Compliance Assurance and Enforcement Division  
Water Enforcement Branch (6EN-W)  
U.S. Environmental Protection Agency,  
Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733
- New Mexico:  
Program Manager  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 26110  
1190 Saint Francis Drive  
Santa Fe, NM 87502
5. **ADDITIONAL MONITORING BY THE PERMITTEE**  
If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR). Such increased monitoring frequency shall also be indicated on the DMR.
6. **AVERAGING OF MEASUREMENTS**  
Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
7. **TWENTY-FOUR HOUR REPORTING**
- a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances. The report shall contain the following information:
- (1) A description of the noncompliance and its cause;
  - (2) The period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and,
  - (3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.
- b. The following shall be included as information which must be reported within 24 hours:
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - (2) Any upset which exceeds any effluent limitation in the permit; and,
  - (3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part II (industrial permits only) of the permit to be reported within 24 hours.
- c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

**8. OTHER NONCOMPLIANCE**

The permittee shall report all instances of noncompliance not reported under Parts III.D.4 and D.7 and Part I.B (for industrial permits only) at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.7.

**9. OTHER INFORMATION**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

**10. CHANGES IN DISCHARGES OF TOXIC SUBSTANCES**

All existing manufacturing, commercial, mining, and silvacultural permittees shall notify the Director as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 µg/L);

(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitro-phenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the Director.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 µg/L);

(2) One milligram per liter (1 mg/L) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the Director.

**II. SIGNATORY REQUIREMENTS**

All applications, reports, or information submitted to the Director shall be signed and certified.

a. ALL PERMIT APPLICATIONS shall be signed as follows:

(1) FOR A CORPORATION - by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or,

(b) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) FOR A PARTNERSHIP OR SOLE PROPRIETORSHIP - by a general partner or the proprietor, respectively.



(3) FOR A MUNICIPALITY, STATE, FEDERAL, OR OTHER PUBLIC AGENCY - by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

b. ALL REPORTS required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or an individual occupying a named position; and,

(3) The written authorization is submitted to the Director.

c. **CERTIFICATION**

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information,

the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12. **AVAILABILITY OF REPORTS**

Except for applications, effluent data, permits, and other data specified in 40 CFR 122.7, any information submitted pursuant to this permit may be claimed as confidential by the submitter. If no claim is made at the time of submission, information may be made available to the public without further notice.

**E. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS**

1. **CRIMINAL**

a. **NEGLIGENT VIOLATIONS**

The Act provides that any person who negligently violates permit conditions implementing Section 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

b. **KNOWING VIOLATIONS**

The Act provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. **KNOWING ENDANGERMENT**

The Act provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than \$250,000, or by imprisonment for not more than 15 years, or both.

d. **FALSE STATEMENTS**

The Act provides that any person who knowingly makes any false material

- statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or by both. (See Section 309.c.4 of the Clean Water Act)
2. **CIVIL PENALTIES**  
The Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed \$27,500 per day for each violation.
3. **ADMINISTRATIVE PENALTIES**  
The Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows:
- a. **CLASS I PENALTY**  
Not to exceed \$11,000 per violation nor shall the maximum amount exceed \$27,500.
- b. **CLASS II PENALTY**  
Not to exceed \$11,000 per day for each day during which the violation continues nor shall the maximum amount exceed \$137,500.
- F. **DEFINITIONS**  
All definitions contained in Section 502 of the Act shall apply to this permit and are incorporated herein by reference. Unless otherwise specified in this permit, additional definitions of words or phrases used in this permit are as follows:
1. **ACT** means the Clean Water Act (33 U.S.C. 1251 et. seq.), as amended.
2. **ADMINISTRATOR** means the Administrator of the U.S. Environmental Protection Agency.
3. **APPLICABLE EFFLUENT STANDARDS AND LIMITATIONS** means all state and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards or performance, toxic effluent standards and prohibitions, and pretreatment standards.
4. **APPLICABLE WATER QUALITY STANDARDS** means all water quality standards to which a discharge is subject under the Act.
5. **BYPASS** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **DAILY DISCHARGE** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day. "Daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be arithmetic average (weighted by flow value) of all samples collected during that sampling day.
7. **DAILY MAXIMUM discharge limitation** means the highest allowable "daily discharge" during the calendar month.
8. **DIRECTOR** means the U.S. Environmental Protection Agency Regional Administrator or an authorized representative.
9. **ENVIRONMENTAL PROTECTION AGENCY** means the U.S. Environmental Protection Agency.

10. GRAB SAMPLE means an individual sample collected in less than 15 minutes.
11. INDUSTRIAL USER means a nondomestic discharger, as identified in 40 CFR 403, introducing pollutants to a publicly owned treatment works.
12. MONTHLY AVERAGE (also known as DAILY AVERAGE) discharge limitations means the highest allowable average of "daily discharge(s)" over a calendar month, calculated as the sum of all "daily discharge(s)" measured during a calendar month divided by the number of "daily discharge(s)" measured during that month. When the permit establishes daily average concentration effluent limitations or conditions, the daily average concentration means the arithmetic average (weighted by flow) of all "daily discharge(s)" of concentration determined during the calendar month where C = daily concentration, F = daily flow, and n = number of daily samples; daily average discharge =
- $$\frac{C_1F_1 + C_2F_2 + \dots + C_nF_n}{F_1 + F_2 + \dots + F_n}$$
13. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Act.
14. SEVERE PROPERTY DAMAGE means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
15. SEWAGE SLUDGE means the solids, residues, and precipitates separated from or created in sewage by the unit processes of a publicly owned treatment works. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff, that are discharged to or otherwise enter a publicly owned treatment works.
16. TREATMENT WORKS means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage and industrial wastes of a liquid nature to implement Section 201 of the Act, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and their appurtenances, extension, improvement, remodeling, additions, and alterations thereof.
17. UPSET means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
18. FOR FECAL COLIFORM BACTERIA, a sample consists of one effluent grab portion collected during a 24-hour period at peak loads.
19. The term "MGD" shall mean million gallons per day.
20. The term "mg/L" shall mean milligrams per liter or parts per million (ppm).
21. The term "µg/L" shall mean micrograms per liter or parts per billion (ppb).
22. MUNICIPAL TERMS
- a. 7-DAY AVERAGE or WEEKLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The 7-day average for fecal coliform

bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

b. 30-DAY AVERAGE or MONTHLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. The 30-day average for fecal coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar month.

c. 24-HOUR COMPOSITE SAMPLE consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at

frequent intervals proportional to flow over the 24-hour period.

d. 12-HOUR COMPOSITE SAMPLE consists of 12 effluent portions collected no closer together than one hour and composited according to flow. The daily sampling intervals shall include the highest flow periods.

e. 6-HOUR COMPOSITE SAMPLE consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.

f. 3-HOUR COMPOSITE SAMPLE consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.

**Chavez, Carl J, EMNRD**

**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, July 07, 2006 8:01 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** RE: Navajo Refinery NPDES Permit Issued by EPA

Carl

Thanks for the update and clarifications.

Hope

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, July 06, 2006 4:17 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Navajo Refinery NPDES Permit Issued by EPA

Hope:

Navajo Artesia applied for a permit through the EPA to discharge Reverse Osmosis (RO) water via an NPDES Discharge Permit into the Pecos River because there is an incentive for dischargers of fresh water into Intrastate Waters in NM. However, subsequent to the NPDES permit application, Navajo indicated to the OCD that the water right recharge credits through the OSE were more beneficial than the \$400K/yr incentive to discharge into Intrastate waters; thus, Navajo was no longer interested in discharging to the Pecos River. However, it did not rescind the NPDES permit application through the EPA and the EPA has issued a permit not to discharge. However, if for some reason Navajo discharges to the Pecos River, it will be limited to about 207 gpm discharge with the monitoring requirements specified within the permit.

The RO discharge monitoring required under OCD's discharge plan is as follows:

Section 16: Reverse Osmosis Reject Water:

A. The dischg. of reject water from RO treatment facility to Navajo Farms shall not exceed the following stds. in the table (Discharge to Eagle Draw is prohibited): Aluminum (87 ppb); Arsenic (100 ppb); Beryllium (18 ppb); Barium (1000 ppb); Boron (750 ppb); Cadmium (10 ppb); Chlordane (0.015 ppb); Chlorine (30 ppb); Chromium (50 ppb); Cobalt (50 ppb); Copper (1000 ppb); Cyanide (18 ppb); Fluoride (2500 ppb\*); Iron (1000 ppb); Manganese (200 ppb); Lead (6 ppb); Mercury (0.042 ppb); Nickel (200 ppb); NH<sub>3</sub> as N (0.07 ppb); Radium 226+228 (30 pCi/L); Selenium (12 ppb); Silver (0.4 ppb); Vanadium (282 ppb); Zinc (10 ppm); Sulfate (2661 ppm); Chloride (275 ppm); TDS (4555 ppm); COD (125 ppm); pH (6.6 - 8.6); BOD (30 ppm); TSS (<0.5 ppm); and Fecal Colliform Bacteria (<500 organisms/100 ml).

Note: \* Amended June 29, 1993

B. Constituents not listed in A. above for which there are stds. established pursuant to WQCC Regulation 3103 will not exceed the set numerical std. in that regulation.

C. No toxic pollutant listed in WQCC regulation 1101 TT, will be present in the discharge.

D. Sampling: samples of the dischg. will be taken and analyzed on the following schedule:

- i. Major cations/anions and heavy metals will be sampled at a min. of semi-annually.
- ii. All other constituents will be sampled annually, including the constituents in the above table and VOCs/SVOCs including Pesticides using EPA methods 624, 625, and 608 respectively.
- iii. Analysis for all parameters will be pursuant to EPA approved methods.
- iv. Sampling and analytical QA/QC records will be retained for all sampling events.

7/7/2006

- v. All samples will be 'grab' samples.
- vi. Discharge flow will be monitored and recorded on a daily basis.
- vii. Sampling freq. can be reduced, on a parameter-by-parameter basis, upon application and OCD approval provided all analytical data in the previous year was no greater than 75% of the effluent limit.
- viii. All samples collected in a monitoring period will be reported.
- ix. Sampling and flow measurement will be representative of the volume and nature of the dischg.
- x. Any constituent that exceeds the stds. listed above shall be cause for Navajo to stop dischg. to the farm area and provide OCD immediate notification. Navajo may not resume discharging until the problem has been corrected.
- xi. Sample data analytical results and flow measurements shall be reported to the OCD in the annual report.

To date, Navajo has been using their injection wells; and are planning to construct another Class I UIC well; and they've also been able to discharge some of their RO water onto farmland down gradient from the refinery in NM and TX.

Please contact me if you have questions. Thnx.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
 Office: (505) 476-3491  
 Fax: (505) 476-3462  
 E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
 Website: <http://www.emnrd.state.nm.us/ocd/>  
 (Pollution Prevention Guidance is under "Publications")

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Thursday, July 06, 2006 3:13 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Navajo Refinery NPDES Permit Issued by EPA

Carl

Do you know what Navajo is discharging under the NPDES permit? Is Navajo no longer using the injection wells?

Thanks

Hope

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, July 05, 2006 5:06 PM  
**To:** Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV  
**Subject:** FW: Navajo Refinery NPDES Permit Issued by EPA

Hope & Dave:

FYI.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
 Office: (505) 476-3491  
 Fax: (505) 476-3462  
 E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
 Website: <http://www.emnrd.state.nm.us/ocd/>

7/7/2006

(Pollution Prevention Guidance is under "Publications")

---

**From:** Saums, Glenn, NMENV  
**Sent:** Wednesday, July 05, 2006 2:56 PM  
**To:** Price, Wayne, EMNRD  
**Cc:** Powell, Richard, NMENV; Leavitt, Marcy, NMENV; Chavez, Carl J, EMNRD  
**Subject:** Navajo Refinery NPDES Permit Issued by EPA

FYI, see attached.

Glenn

Glenn Saums  
New Mexico Environment Dept.  
Surface Water Quality Bureau  
Point Source Regulation Section  
P.O. Box 26110  
Santa Fe, NM 87502-6110  
ph. (505) 827-2827  
fax. (505) 827-0160  
e-mail: [glenn.saums@state.nm.us](mailto:glenn.saums@state.nm.us)

7/7/2006

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, June 27, 2006 12:55 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: discharge plan

Darrell:

I am in receipt of your renewal notice for Navajo's discharge plans for Lovington and Artesia. The discharge plan for Artesia cannot be processed because the OCD did not receive a response to our letter dated March 3, 2006, where the OCD had requested the status of Section H "Additional Requirements" of the existing permit. Please respond to our letter so we may process your renewal discharge plan for Artesia. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/oed/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Tuesday, June 27, 2006 11:25 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD  
**Subject:** FW: discharge plan

Carl,

Enclosed, please find our renewal notice for our discharge plans for our Lovington and Artesia facilities. Hard copies and filing fees will follow by US Mail. If you have any questions, please call me at 505-746-5281.

---

**From:** Byrd, Jeff  
**Sent:** Tuesday, June 27, 2006 11:21 AM  
**To:** Moore, Darrell  
**Subject:** discharge plan

Jefferson L. Byrd  
Sr. Environmental Specialist  
Navajo Refining - Environmental Department  
Artesia New Mexico  
Office - 505-746-5468  
Cell - 505-703-5068

6/27/2006





**BILL RICHARDSON**  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*  
*Telephone (505) 428-2500*  
*Fax (505) 428-2567*

[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



**RON CURRY**  
SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

June 5, 2006

Darrell Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88211-0159

**SUBJECT: REQUIREMENT FOR WORK PLAN SUBMITTAL REGARDING  
THREE MILE DITCH AND EVAPORATION PONDS CORRECTIVE  
ACTION INVESTIGATION REPORT  
NAVAJO REFINING COMPANY  
EPA ID #: NMDO48918817  
HWB-NRC-05-002**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) is in receipt of Navajo Refining Company's (Permittee) report entitled *Three Mile Ditch and Evaporation Ponds Corrective Action Investigation Report* Revision 1, dated December 2005 (Report). The Report recommended remedial actions along Three Mile Ditch (TMD) and at the Evaporation Ponds (EP) at the Navajo Refinery, Artesia, New Mexico. The proposed remedial actions were further discussed during a conference call between the Permittee and NMED on March 21, 2006. The conference call resulted in revisions to the original proposed remedial actions, which were summarized in a letter submitted by the Permittee titled *Navajo Refining Company, Artesia, New Mexico Three Mile Ditch and Evaporation Ponds Workplan*, dated April 12, 2005 (Additional Information).

This letter addresses TMD and the EPs as separate entities, because the EPs must undergo RCRA closure under 40 CFR 264 subparts G and F and 40 CFR 264.228. Therefore, separate work plans will be required for each site to address soil removal actions, outline additional

Darrell Moore  
Navajo Refining Company  
June 5, 2006  
Page 2

investigations along the TMD, and monitoring well installations at the EPs. The Permittee must submit work plans for both sites that, at a minimum, include the requirements addressed below:

1. The Additional Information letter (bullet four) proposes the collection of five-point composite samples for characterization of soil for disposal purposes by analysis of toxicity characteristic leaching potential (TCLP) lead. A composite sample must be collected for every 300 cubic yards of excavated soil for TCLP lead analysis. At least one composite sample of excavated soil must be collected in the other proposed areas of excavation that include: TMD-1, TMD-7, and TMD-11 (see comments 2. a, b, and c). The samples must be collected from the most contaminated soil based on field observations (e.g., visual) and previous data gathered from the June-July 2004 investigation. The Permittee must also describe the proposed methods for sample collection.
2. The work plan must address the removal of soil and additional investigations at the locations identified by NMED along TMD. The plan must include a description of how the Permittee will assess whether residual soil contamination is below applicable clean up levels (e.g., NMED Soil Screening Levels). The following activities must be addressed in the work plan:
  - a. Excavate soils from the TMD west of TMD-11 to east of TMD-19. The proposed dimensions of the excavation are 2,500 feet long by 10 feet wide to a depth of 3 feet. Collect composite samples to profile for soil disposal every 300 cubic yards as described in Item 1 above.
  - b. Excavate soils from the area surrounding TMD-1. The proposed dimensions of the excavation are 10 feet wide by 100 feet long to a depth of approximately three feet. Collect at least one composite sample to profile for soil disposal as described in Item 1 above.
  - c. Excavate soils from the area surrounding TMD-7. The proposed dimensions of the excavation are 10 feet wide by 50 feet long to a depth of approximately three feet. Collect at least one composite sample to profile for soil disposal as described in Item 1 above.
  - d. Investigate the area where the Public Service Company of New Mexico (PNM) discovered petroleum-related contamination during the installation of a gas line in March of 2006. Correspondence with the Permittee identified the contamination located along the TMD approximately 50 feet west of TMD-10. The investigation activities must include excavation of a test pit adjacent to the newly-installed

pipeline where contaminants were discovered by PNM. Soil samples must be collected at the surface, between the surface and the water table, directly above the water table, and at the depth that corresponds with the maximum depth of the trench dug by PNM. The samples must be analyzed for gasoline range organics (GRO), diesel range organics (DRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary-butyl ether (MTBE), and RCRA metals.

- e. Further investigate the area between TMD-33 to TMD-38 to delineate the extent of elevated total petroleum hydrocarbons (TPH) and arsenic. Soil samples shall be collected from the surface to a depth of three feet below ground surface. TMD-36 and TMD-37 exceeded the industrial soil screening levels (SSL) at 10-12.5 feet and 7.5-10 feet, respectively, for total petroleum hydrocarbons (TPH) as determined using the New Mexico Environment Department's TPH Screening Guidelines. It maybe necessary to investigate these locations at greater depths to confirm the depths at which the contamination is present.
  - f. Installation of a monitoring well down gradient of TMD-27.
  - g. Sample monitoring wells MW-17 and MW-27 located near TMD and include chemical analysis for major anions/cations, chlorides and sulfates on a semi-annual basis.
  - h. Identify the monitoring wells to be included in the semi-annual groundwater monitoring plan in the vicinity of the soil excavations. These wells shall be analyzed for BTEX, arsenic, lead, DRO, general water quality parameters (include the parameters to be analyzed), total dissolved solids, and nitrate/nitrite.
3. The Permittee must submit a work plan for the installation of monitoring wells within the EPs and include any additional monitoring around the EPs. At a minimum, the following activities must be addressed in the work plan:
- a. Installation of monitoring wells at each of the former influent locations at EP's 1, 2, and 5.
  - b. Installation of four monitoring wells within EP-1 at the following borehole locations identified in the Corrective Action Investigation Report: EP1-1, EP1-3, EP1-10, and EP1-12.

RECEIVED

NOV 29 2006

Darrell Moore  
Navajo Refining Company  
June 5, 2006  
Page 4

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

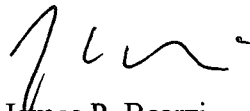
- c. Installation of four monitoring wells within EP-2 at the following borehole locations identified in the Corrective Action Investigation Report: EP2-4, EP2-11, EP2-14, and in the general area between EP2-18 and EP2-21.
  - d. Installation of three monitoring wells within EP-5 at the following borehole locations identified in the Corrective Action Investigation Report: EP5-1, EP5-3, and in the general area between EP5-10 and EP5-13.
  - e. Installation of one monitoring well within EP-3.
  - f. Installation of one monitoring well within EP-6.
  - g. Installation of two additional monitoring wells south and southeast of the EP's. One monitoring well shall be located south of MW-6A at the halfway point west of a line between MW-4A and MW-10. A second monitoring well shall be located halfway between MW-7B and MW-18A.
  - h. Sampling of monitoring wells MW-7A, MW-5C, MW-3, MW-2, OCD-1, OCD-7, OCD-8 and all other proposed monitoring wells semi-annually for three years. The monitoring wells shall be analyzed for BTEX, naphthalene, DRO, lead, arsenic, selenium, major cations and anions (general water quality), TDS and nitrates/nitrites, chloride, and sulfate.
4. The work plans must be prepared in accordance with the requirements included in Appendix E, Section E.2 of the Post Closure Care Permit.

Darrell Moore  
Navajo Refining Company  
June 5, 2006  
Page 5

The EP work plan is due on or before August 31, 2006 and the TMD work plan is due on or before October 30, 2006.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

JPB:hcm

cc: H. Monzeglio, NMED HWB  
J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
~~W. Price, OCD~~  
D. Whaley, NRC  
S. Hall, ARCADIS  
L. King, EPA-6PD-N

Reading File and NRC 2006 File

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, May 23, 2006 3:30 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: Tk 838

Darrell:

The OCD has completed its review of the analytical data submitted to support your request to discharge hydrotest water onto farm land. The OCD hereby approves your discharge request. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Tuesday, May 23, 2006 2:25 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Tk 838

Carl

Have you been able to look at this and approve it?

---

**From:** Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]  
**Sent:** Tuesday, May 23, 2006 8:28 AM  
**To:** Moore, Darrell  
**Subject:** RE: Tk 838

Thanks Darrell.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Tuesday, May 23, 2006 8:30 AM  
**To:** Chavez, Carl J, EMNRD

5/23/2006

**Subject:** RE: Tk 838

No. It was taken down for routine maintenance....a new floor put in, manway relocated. We inspect all of our tanks on a schedule and if the metal doesn't meet standards due to corrosion, that floor is replaced. The floor in Tk 838 was replaced because upon inspection, it no longer met the minimum thickness that our standards require.

---

**From:** Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]  
**Sent:** Tuesday, May 23, 2006 8:06 AM  
**To:** Moore, Darrell  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: Tk 838

Darrell:

Good morning. Was Tk 838 leaking?

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]  
**Sent:** Tuesday, May 23, 2006 7:24 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Tk 838

Carl,

Attached, please find the analysis for the Hydrotest Water from Tk 838. We have approx. 40,000 bbls of this water that we would like to discharge to our farm on the south side of Eagle Draw. If you will remember, this is one of the farms we discharge the RO reject onto. If you have any questions, please contact me at this e mail address or call me at 505-703-5058. Thank you for your attention to this matter.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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5/23/2006

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**Chavez, Carl J, EMNRD**

**From:** Price, Wayne, EMNRD  
**Sent:** Thursday, May 18, 2006 4:48 PM  
**To:** Chavez, Carl J, EMNRD; 'Moore, Darrell'  
**Subject:** RE: HydroTest water Navajo Refinery

OCD hereby approves of Navajo Refinery putting this water to beneficial use on the farm properties with the following conditions:

1. Water will not be allowed to leave the farm area.
2. This approval is good for tank 838 only and will expire in 30 days.

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

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, May 18, 2006 2:33 PM  
**To:** Moore, Darrell  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: HydroTest water

Darrell:

I am in receipt of your msg. and will respond soon. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@hollycorp.com>]  
**Sent:** Thursday, May 18, 2006 11:19 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** HydroTest water

Carl,

We are in the process of hydrotesting a tank that we recently put a new floor in (Tank 838). We are collecting samples for the WQCC standards to petition OCD to allow us to dump this water on our farm which we have done many times in the past. Since there is a new regime there we just want to verify that OCD will still allow us to do away with testing for Uranium and radioactivity. The water that we are hydrotesting with is City of Artesia drinking water and the Uranium and radioactivity will be No Detect. If we have to analyze for those constituents, we have to send samples to a separate lab and the turn-around time is longer. Tanks in a refinery are precious and our management wants this tank back in service ASAP. Could you give us your agreement that Uranium and radioactivity do NOT need to be analysed?

Thanks

Darrell Moore

5/19/2006

Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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## REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

May 2, 2006

Hope Monzeglio  
Project Leader  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Bldg 1  
Santa Fe, NM 87505-6303

2006 MAY 4 AM 11:52  
COPY

Dear Ms. Monzeglio,

As a result of our phone call last week I have reviewed the information and discussed analytical methods with the lab. Following that I have prepared the following recommendations for more efficient groundwater monitoring at our site.

- Navajo proposes removing the 16 recovery trenches (RW-2 – RW-17) from the list and all cost analyses as agreed to during the phone call.
- Replace all references to method 8021B (BTEX) with 8260 (VOC's). There are 33 references to the 8021B method and 63 references to the 8260 method in the original document. A single method for BTEX, MTBE and other volatiles will be less confusing for samplers. It will also allow for detection of the semi-volatile naphthalene as described below.
- Remove all references to EPA Method 8310. This method tests for semivolatile organics commonly associated with hydrocarbon refining (versus 8270 which encompasses all semivolatiles including chlorinated). Method 8260 will pick up the most mobile of the SVOC's, naphthalene.
- There are 32 locations on the list requiring GRO+DRO analysis and 51 requiring DRO only. TX 1005 is the TPH screening tool used by Texas TCEQ. It has a detection limit of 5 mg/L. 8015B has GRO and DRO reporting limits of 0.05 and 0.1 but requires collection of a one-litter sample vs. three 40 ml vials. TX 1005 requires less sample but is only slightly cheaper than 8015B. TX1005 also has a higher detection limit. Therefore, Navajo recommends the 8015B method.

- Replace all references to priority pollutant metals and As, Pb, and Cr with RCRA metals. Again, simplicity is one reason. The original list is weighted toward analyses for priority pollutant metals (13 metals); there are 63 wells to be sampled for priority pollutants vs. 31 to be sampled for the three constituents. There are eight RCRA metals and they include As, Pb and Cr plus Ba, Ca, Hg, Se, and Ag.
- Remove the 8 RA wells from sampling for metals. These are irrigation wells and would be impacted by hydrocarbons not metals.

Finally, Navajo would like to review this list at the end of two years and propose modifications that may include reduction in sampling constituents and/or dropping of some monitor wells from the list entirely.

I thank you for taking the time to let us work out a sampling plan that meets both the environmental concerns and addresses all three parties (NMED, OCD, and Navajo) needs. I look forward to hearing your response.

Sincerely,

**NAVAJO REFINING COMPANY**

A handwritten signature in cursive script that reads "Darrell Moore". The signature is written in dark ink and is positioned above the printed name.

Darrell Moore

Environmental Manager for Water and Waste

Cc: Wayne Price, NMOCD



**BILL RICHARDSON**  
GOVERNOR

**State of New Mexico**  
**ENVIRONMENT DEPARTMENT**

**Hazardous Waste Bureau**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, New Mexico 87505-6303**  
**Telephone (505) 428-2500**  
**Fax (505) 428-2567**  
**www.nmenv.state.nm.us**



**RON CURRY**  
SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

April 17, 2006

Darrell Moore  
Environmental Manager for  
Water and Waste  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

2006 APR 21 PM 12 05

**SUBJECT: RESPONSE TO WELL ABANDONMENT INFORMATION**  
**NAVAJO REFINING COMPANY, ARTESIA, REFINERY**  
**EPA ID No. NMD048918817**  
**HWB-NRC-05-001**

Dear Mr. Moore:

New Mexico Environment Department (NMED) has received Navajo Refining Company's (Permittee) letter *Response to Request For Well Abandonment Information*, dated April 4, 2006. Based on the information provided in the letter, monitoring well MW-1 has been damaged and a replacement well has been installed next to MW-1. NMED is requiring the Permittee to properly abandon MW-1 no later than November 30, 2006.

In recollection of the November 28, 2005 letter, the Permittee must submit any changes to the site plan and well list, as well as provide well abandonment information to NMED on a yearly basis by December 30<sup>th</sup> of each respective year. If changes do not occur that affect the site plan and well list, and no wells are abandoned, the Permittee must still submit a letter stating this information.

Mr. Moore  
Navajo Refining Company  
April 17, 2006  
Page 2 of 2

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,



Hope Monzeglio  
Project Leader  
Permits Management Programs

HM

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
W. Price, OCD  
J. Byrd, NRC  
D. Whaley, NRC

File: Reading File and NRC 2006 File

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, April 06, 2006 2:47 PM  
**To:** Monzeglio, Hope, NMENV; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** RE: Well Sampling

Hope:

Next Tuesday after 10:15 a.m. would work well for us.

FYI, according to the OCD Permit (applicable subsections within Section 17- Vadoso Zone and Water Pollution), and regarding recovery wells to be sampled, please read the following:

17B. "Navajo shall collect groundwater samples on an annual basis from monitoring wells ..... and from the following recovery trenches that do not have measurable phase-separated hydrocarbons (PSH's); RW-1 through RW-15, and Bolton Road #1-4. These samples shall be analyzed for volatiles, semi-volatiles, WQCC metals, general chemistry including major anions and cations, nitrate/nitrite, dissolved oxygen and oxidation-reduction potential (ORP) all pursuant to EPA approved methods."

17C. "All recovery trenches and all wells (including North Colony Landfarm and Tetra-ethyl-lead wells) with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to 0.01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology."

Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/oed/>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Thursday, April 06, 2006 11:52 AM  
**To:** Chavez, Carl J, EMNRD; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** FW: Well Sampling

Wayne and Carl

Here is an email from Darrell about sampling the recovery wells.

Hope

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@navajo-refining.com>]  
**Sent:** Tuesday, April 04, 2006 8:31 AM  
**To:** Monzeglio, Hope, NMENV  
**Subject:** Well Sampling

4/6/2006

Hope

We are in receipt of the combined sampling from OCD and NMED. One concern we have is the sampling of recovery wells. Obviously, these wells have hydrocarbons in them and they are huge in size. For us to even try to sample them would require pumping thousands of gallons of water out of each of them to get the required three volumes out before taking samples. Even if we did that.....we would be sampling hydrocarbons. Further, these recovery wells were not installed to be sampling points. We have monitor wells in the vicinity of these recovery wells that WERE installed to be sampled and that you are having us sample.

Sampling the recovery wells seems to be a whole lot of effort and sampling for little , if any, gain.

Could we get you to take another look at that issue?

I appreciate your attention to this matter .

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
phone: 505.746.5281  
cell: 505.703.5058  
fax: 505.746.5451

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4/6/2006



**Chavez, Carl J, EMNRD**

---

**From:** Cobrain, Dave, NMENV  
**Sent:** Thursday, April 06, 2006 5:08 PM  
**To:** Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD  
**Subject:** RE: Well Sampling

Well that settles that. You just shortened the conference call by providing the answer to one of Darrell's issues. Thanks Carl.

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, April 06, 2006 2:47 PM  
**To:** Monzeglio, Hope, NMENV; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** RE: Well Sampling

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4/11/2006

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**Subject:** Well Sampling

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4/11/2006

**Chavez, Carl J, EMNRD**

**From:** Bratcher, Mike, EMNRD  
**Sent:** Wednesday, March 29, 2006 2:26 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Eagle Draw - Bolton Rd. Discovery Area

Carl,

My knowledge of the "drainage canal" is from having lived in the area while the canal was active. I do not have any direct knowledge of what any agency has done or has had Navajo do to address the canal. I am pretty sure that "3 Mile Ditch" is what the canal has become known as and referred to as. It is my understanding that PNM was able to complete their bore hole operations and install the pipeline. Eagle Creek and Eagle Draw are the same watercourse. Eagle Draw originates in the foothills West of Artesia and would be considered a main carrier of rainwater run-off for this area. Once Eagle Draw hits town, some locals refer to it as Eagle Creek. It is primarily dry and only becomes active during precipitous events. I am not sure what jurisdiction the OCD would have in this incident, but some of my concerns would be:

- Where did the "oily" fluids come from.
- How much more is down there
- If there is some sort of containment vessel below the roadway, it has obviously been breached.
- Since this ditch carried waste products from the refinery, what type COCs are present.
- It is possible that PNM hit a flow line (active or inactive) due to some wells being situated in the vicinity, so I suppose the source would be the first thing to determine.
- Has protectable ground water been impacted or re-impacted since I assume the monitor wells are part of an abatement plan.

Let me know if I can do anything on this end.

Mike Bratcher  
 NMOCD District 2  
 (505)748-1283 Ext.108  
 (505) 626-0857

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, March 29, 2006 11:45 AM  
**To:** Bratcher, Mike, EMNRD  
**Subject:** Eagle Draw - Bolton Rd. Discovery Area

Mike:

I spoke with Hope Monzeglio of the NMED- HWB. MW-20, Piez. Well NP-3 (just east of the discovery area) are scheduled to be sampled 30 days before the irrigation season starts. They will be sampled for: pH, Conductance, temp., oxidation-reduction, dissolved oxygen, VOCs EPA Method 8260, DRO EPA Method 8015B, SVOCs, EPA Method 8310, Priority Pollutant Metals, major Cations/Anions, Nitrates/Nitrites. Piezometer wells NP-1 and 2 will be sampled for pH, conductance, temp., oxidation-reduction, dissolved oxygen, EPA Method 8021 B and MTBE. MWs 8 and 21 further to the east and just south of Eagle Draw will also be sampled similar to MW-20..

The OCD/HWB will need to decide whether we want to sample NP-2 for VOCs, since it is just SW of MW-20? A few other questions that you may be able to answer are: 1) Navajo has completed a "3-Mile Ditch" investigation for NMED- HWB that is nearby the discovery area and the question is whether 3-mile ditch is the same as the flume just south of Eagle Draw? 2) Did the discovery prevent PNM from installing the gas line as there may be worker safety issues if PNM proceeds to install the gas line? 3) Is Eagle Creek the same as Eagle Draw?

The HWB is currently providing comments to Navajo on the 3-Mile Ditch investigation and has a phone msg. into Darrell Moore about the recent discovery and whether they will want the investigation to cover the discovery area. She will get back in touch with me after speaking with Darrell. OCD/NMED will contact Darrell via phone at a later date about the discovery. I'll keep you posted on the HWB call to Darrell as soon as Hope gets back with me.

3/29/2006

Perhaps you can answer the above questions in red text? If not, I'll check with Darrell. Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
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(Pollution Prevention Guidance is under "Publications")

**Chavez, Carl J, EMNRD**

---

**From:** Cobrain, Dave, NMENV  
**Sent:** Wednesday, March 29, 2006 12:31 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Cc:** Monzeglio, Hope, NMENV  
**Subject:** RE: Bore pit location on Eagle Creek, Navajo Artesia Expansion Project

Wayne,

We just spoke to Darrell last week about remedial soil removal along 3-mile-ditch last week including a relatively long section near Bolton Rd. We will be requiring them to submit a work plan for the soil removal among other things. This looks like new information that adds to the data gathered during the 3MD/Evaporation Ponds investigation that was required under their RCRA permit but we can't tell from the email exactly where this site is located relative to 3-mile-ditch. I've asked Hope to follow up on this with you (OCD) and PNM as well as Navajo. Thanks for the heads up. We'll send any additional information Hope gathers along to you and then we should make arrangements to talk about the next step. Thanks.

Dave

---

**From:** Price, Wayne, EMNRD  
**Sent:** Wednesday, March 29, 2006 8:21 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV  
**Subject:** FW: Bore pit location on Eagle Creek, Navajo Artesia Expansion Project

Carl, please call Mike Brachter (OCD Artesia) and discuss this with him. Please follow-up with Darrell Moore and try to find out where the source of the contamination.

---

**From:** Bratcher, Mike, EMNRD  
**Sent:** Tuesday, March 28, 2006 7:55 AM  
**To:** Price, Wayne, EMNRD; VonGonten, Glenn, EMNRD  
**Cc:** Gum, Tim, EMNRD; Barton, Van, EMNRD  
**Subject:** FW: Bore pit location on Eagle Creek, Navajo Artesia Expansion Project

---

**From:** Acklen, John [mailto:JACKLEN@pnm.com]  
**Sent:** Monday, March 27, 2006 4:18 PM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Shaver, Rick; Gannon, Maureen  
**Subject:** Bore pit location on Eagle Creek, Navajo Artesia Expansion Project

Mike,

I am sending this report at the request of Rick Shaver who you met on site the other day. Rick prepared this report which summarizes conditions as he found them at our bore location on Eagle Creek. If we can supply additional information, please feel free to contact me. My number is attached.

Regards

*John C. Acklen*  
*PNM Environmental Services Department*

3/29/2006

**Chavez, Carl J, EMNRD**

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**Cc:** Shaver, Rick; Gannon, Maureen  
**Subject:** Bore pit location on Eagle Creek, Navajo Artesia Expansion Project

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Regards

*John C. Acklen*  
*PNM Environmental Services Department*  
*Alvarado Square MS 2104*  
*Albuquerque, NM 87158*  
*(505) 241-2998*  
*(505) 241-2376 (fax)*  
*(505) 362-2996 (mobile)*

<<Insp Frm ENVIRONMENT 3-23-06edited.xls>> <<Artesia pictures 146.jpg>> <<Artesia pictures 147.jpg>> <<Artesia pictures 148.jpg>> <<Artesia pictures 149.jpg>> <<Artesia pictures 150.jpg>> <<Artesia pictures 151.jpg>>

Carl, please call Mike Brachter (OCD Artesia) and discuss this with him. Please follow-up with Darrell Moore and try to find out where the source of the contamination. Mike Brachter's phone number is: (505) 626-0857  
Wayne Price 3-29-06 8:21 a.m.

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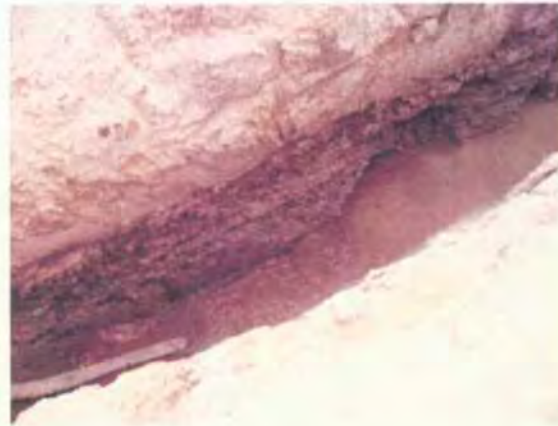
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(505) 241-2998  
(505) 241-2376 (fax)  
(505) 362-2996 (mobile)

**Photos:**







# ARTESIA NAVAJO EXTENSION PROJECT

INSPECTOR NAME: RICK SHAVER	ENGINEER / PROJECT MANAGER TOM DOLES	
CONTRACTOR SUPERINTENDENT	FERGUSON CONSTRUCTION ROGER HEAD	
SAFETY	ERIC HERNANDEZ	

## ENVIRONMENTAL

IN THE PROCESS OF MAKING A DIRECTIONAL BORE UNDER BOLTON ROAD AND EAGLE CREEK, WE ENCOUNTERED THE WATER TABLE AT APPROX 5 FT DEPTH. THERE WAS A HEAVY PETROLEUM ODOR AND A SLIGHT GRAYISH FILM TO THE WATER. KNOWING THAT WE COULD NOT DE-WATER OUR TRENCH TO EAGLE CREEK, I TOLD FERGUSON CONST TO CALL A PUMP TRUCK. A.P.S.I. WAS CALLED TO THE SITE AND HAULED OFF 260 BARRELS OF CONTAMINATED GROUND WATER. IT WAS TAKEN TO CONTROLLED RECOVERY INC. A CERTIFIED O.C.D. SITE. THE PICTURE SHOWS THE START OF THE TAIL DITCH WHERE THE DRILLING HEAD EXITED AND A HOSE COMING OUT OF THE DITCH USED TO PUMP THE WATER. THE HEAD WAS SO DEEP WE COULDN'T GET THE WATER OUT FAST ENOUGH TO REMOVE THE DRILL HEAD.

THE PICTURE SHOWS THE GROUND WATER FILLING OUR TAIL DITCH. THIS IS THE WATER THAT WAS RECOVERED TO EXPOSE OUR PILOT BIT. OUR PILOT BIT WAS NEVER FOUND BECAUSE IT WAS SO DEEP. WE WERE UNABLE TO DIG THROUGH A HARD CEMENT BASE. OUR TRACKING UNIT INDICATED THAT THE BIT WAS APPROX 14 FT DEEP. WE WOULD HAVE BEEN UNABLE TO GET TO THE PILOT AT THAT DEPTH. THIS BORE WAS ABANDONED.

## NAVAJO'S PIPELINE CORRIDOR

THERE ARE ONLY THREE OF NAVAJO'S PIPE LINES SPOTTED IN THIS AREA. ALL ARE APPROX 30 FT TO THE SOUTH.

ONCE THE TRENCH WAS PUMPED, STRATIGRAPHY INDICATED WE WERE DIGGING THROUGH EITHER A MAN MADE CEMENT CHANNEL OR A HIGHLY COMPACTED NATURAL ROCK AND GRAVEL FORMATION.

I HAD ASKED LEE ROY HOWARD, A LIFE LONG RESIDENT AND PNM EMPLOYEE, IF HE KNEW ANYTHING ABOUT THE AREA. HE SAID THERE USED TO BE AN OPEN DITCH WHICH RAN ALONG THE SOUTH SIDE EAGLE CREEK AND CROSSED BOLTON ROAD. HE SAID HE REMEMBERED SEEING A BIG FLUME WHICH CROSSED BOLTON ROAD AND RAN OFF TO THE SOUTH EAST AT THAT POINT. HE REMEMBERED THAT OIL USED TO RUN EAST IN AN OPEN DITCH FROM NAVAJO REFINERY TO BOLTON ROAD AND GO INTO A CATCH BASIN. FROM THAT POINT THE OIL WENT TO OPEN DITCH AND RAN IN A SOUTHEASTERLY DIRECTION.

THIS WAS OUR SECOND BORE ATTEMPT. OUR PILOT BIT EXITED ON THE WEST SIDE OF BOLTON ROAD AND SOUTH OF EAGLE CREEK AT A 7 FT DEPTH. WE WERE FINALLY ABLE TO ATTACH OUR 12" BACK REAMER ON OUR DRILL STEM AND START PRE-REAMING THE HOLE. HARVEY NAVARRETE, THE INSPECTOR ON SITE, CALLED ME AND SAID I'D BETTER COME SEE. WHEN I ARRIVED I TOOK THIS PICTURE OF A POCKET OF DARK GRAY OIL COMING OUT OF OUR PRE-REAM HOLE. ONCE THE REAMER PASSED THE MID-POINT OF BOLTON ROAD THE OIL RECEDED BACK INTO THE POCKET WHERE IT CAME FROM. I HAD CALLED MIKE KLEIHEGE, AN ENGINEER FROM NAVAJO, TO COME LOOK AT THIS. MIKE ARRIVED WITH DARRELL MOORE, AN ENVIRONMENTAL MANAGER FOR WATER AND WASTE FROM NAVAJO. BY THE TIME THEY ARRIVED, THE POCKET OF OIL RECEDED BACK INTO THE BORE HOLE. DARRELL MOORE CONFIRMED THAT THERE USED TO BE AN OPEN DITCH OF RUNNING OIL OUT OF NAVAJO STATION AT THIS LOCATION. I TOLD HIM WHAT LEE ROY HOWARD TOLD ME ABOUT THE CATCH BASIN AND FLUME, HE SAID HE WOULDN'T DOUBT IT. FERGUSON CONSTRUCTION DID A VERY GOOD JOB WITH THIS SITUATION. THEY CONTAINED THE OIL, REMOVED IT, AND THERE

RICK SHAVER MET





WITH MIKE BRATCHER  
FROM OCD. HE  
WANTED THIS  
REPORT.

AS NO FRAC OUT UNDER EAGLE CREEK. THE PICTURE SHOWS  
EAGLE CREEK AS RUNNING WITH CLEAR WATER. I INFORMED TOM  
DOLES, THE PNM ENGINEER IN CHARGE. TOM CALLED MAUREEN  
GANNON, DIRECTOR OF PNM'S ENVIRONMENTAL SERVICES





INSPECTION DATE:

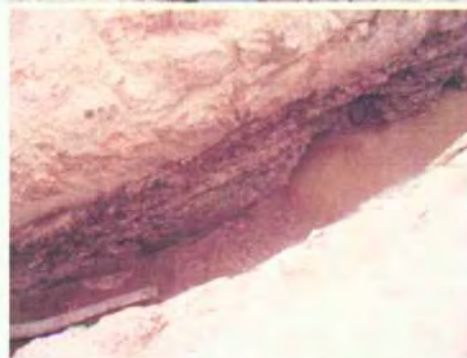
3-23-06 THURSDAY

WO# 011539

PP# 8299301

ENVIRONMENTAL

JOHN ACKLEN









E Richey Ave

357

N Bolton Rural Rd

Voe Rd



© 2006 Navteq  
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Pointer 32°51'07.19" N 104°22'38.77" W elev 3345 ft Streaming 100% Eye alt 9268 ft





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

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@navajo-refining.com>]  
**Sent:** Tuesday, March 14, 2006 9:26 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Pit

I had sent Wayne some analysis of our RO Reject water from Lovington to see what OCD would require from us if we built a pit to store some of that water. I never got any response so I was just checking to see if you were getting the e mails.

---

**From:** Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]  
**Sent:** Tuesday, March 14, 2006 9:12 AM  
**To:** Moore, Darrell; Price, Wayne, EMNRD  
**Subject:** RE: Pit

Darrell:

Good morning. I am in receipt of your e-mail msg. below. Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
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(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@navajo-refining.com>]  
**Sent:** Tuesday, March 14, 2006 9:02 AM  
**To:** Chavez, Carl J, EMNRD; Price, Wayne, EMNRD  
**Subject:** Pit

Are you receiving these e mails?

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
Artesia, NM 88211-0159  
[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
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3/22/2006



**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, March 20, 2006 3:21 PM  
**To:** Price, Wayne, EMNRD  
**Subject:** FW: Pit & RO Lab ID: 0404204-01

Wayne:

See attached the water quality comparisons for Wednesday's call to Darrell. Thnx.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
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 Website: <http://www.emnrd.state.nm.us/ocd/>  
 (Pollution Prevention Guidance is under "Publications")

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, March 20, 2006 3:20 PM  
**To:** 'Moore, Darrell'  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: Pit & RO Lab ID: 0404204-01

Darrell:

Good afternoon. I notice that you exceeded holding times on your sample for BOD and residual chlorine and I don't see lab result for those parameters in the RO analytical lab results (Lab ID 0404204-01). In the lab report, several of the metals, anions, and volatile recoveries were outside of the control limits of the lab and I must question the analytical data results based on this. Also, the reporting limit on the organics; i.e., benzene RQ and BTE in general was 5 ppb seem elevated. Xylenes were 15 ppb RQ.

Did you take a look at the analytical data results? If so, are there exceedences to any of the WQCC water quality standards? If so which parameters exceed and by how much? I think you need to provide OCD with your preliminary assessment of your raw data and indicate the basis for your request for pit construction and use for farm irrigation water supply. I could not find a statement of your intention that accompanied the water quality raw data results.

The OCD generally regards RO reject water as elevated in chlorides and other constituents and OCD requires storage in pits to be constructed in accordance with OCD standard pit construction with leak detection requirements. I believe your request is to construct a pit at the Navajo-Lovington Refinery to store irrigation water for a nearby farmer to use the water off-site for irrigation purposes. Is this correct? If so, this may require a modification to Navajo's discharge permit. We need to know if the water is going off-site and exactly where the water is going? It would seem the farmer would need to pipe the water off refinery property onto the farmland to be irrigated and depending on the farmland property location and the discharge, there could be some discharge issues to discuss.

Regarding pit construction and leak detection, we can talk with Wayne of Wednesday. We'll give you a call. I recommend that you look into the above comments and questions for Wednesday.

Thank you.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505

3/22/2006

**Navajo Lovington Refinery RO Water Sample Results**

Date: 4/16/2004

Lab ID	0404204-01	WQCC	SDWA	SMCL
Metals				
Arsenic:	12.5 ppb	100 ppb	10 ppb	
Barium:	293 ppb	2000 ppb	2000 ppb	
Boron:	342 ppb	750 ppb		
Cadmium	1 ppb	10 ppb	5 ppb	
Chromium (total):	12.9 ppb	100 ppb	100 ppb	
Lead	5 ppb	50 ppb	15 ppb	
Molybdenum:	6.6 ppb	1000 ppb		
Nickel:	5 ppb	100 ppb		
Potassium:	6,780 ppb			
Selenium:	13 ppb	5 ppb	50 ppb	
Vanadium:	67 ppb	100 ppb		
VOCs:	ND			
SVOCs	ND			
BOD:	?			
COD:	60 mg/L			
Phenolics:	50 ppb	21 mg/L		
Chloride:	1,050 mg/L			250 mg/L
Fluoride:	2.4 mg/L	4 mg/L		2 mg/L
Nitrogen:	8 mg/L	10 mg/L		
Sulfate:	251 mg/L			
Residual chlorine	?	11 ppb		
Alkalinity:	110 mg/L			
Specific Cond.:	3,790 umhos/cm			
pH:	6.11			6.5 - 8.5
TDS:	2,990 mg/L			500 mg/L
TSS:	4 mg/L			

**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, March 03, 2006 2:32 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Price, Wayne, EMNRD; Cobrain, Dave, NMENV  
**Subject:** RE: Navajo-Artesia

Hope:

Please find our responses to your msg. below.

3. I think calling it "OCD-1" is preferred to OCD-1R, and it is already in the table.
4. Ok, yes KWB-9 is nearby to RA-1227 and Dave C. said sampling of deeper wells could be performed later to ensure the plume is not below the shallow monitor well network. Ok.
9. I have generally referred to cation/ion sampling as "General Chemistry Parameters," but is just a suggestion. What you have is fine too.
11. Spring is preferred by the OCD too.

Thanks.

Carl J. Chavez, CHMM  
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 (Pollution Prevention Guidance is under "Publications")

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, March 03, 2006 1:54 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD; Cobrain, Dave, NMENV  
**Subject:** Navajo-Artesia

Carl

Thanks for your review. Here is my response to your questions:

1. Bolton Road #1, #2, #3, and #4 are the same as recovery wells RW-11-14. See email from J. Byrd 1/26/06. (will forward again)
2. To my knowledge there is no KWB- 2A. KWB-3A has been replaced by KWB-3R. (sorry for the typo in my earlier email?)
3. OCD 1R. I will rename OCD-1 as OCD-1R.
4. RA-1227 - I did not see RA 1227 in the discharge permit. If OCD want me to add this well, just let me know. My guess for not sampling this well is that RA 3156 is on the sampling list which is located south and slightly east of RA 1227 which would pick up any contaminants that pass RA 1227.
5. RA-1331 - no longer exists and has been replaced. I am not sure if this is a Navajo owned well. It has not been renamed.

3/3/2006

6. RA-6975 - I am not know where this is listed on the map? If OCD wants this included let me know and the location. It is not on Navajo's well list.
7. RW-16- RW-18 - not sure of your comment. the OCD Permit #17. C, I interpreted all recovery trenches to mean all recovery wells, so I included RW-16-RW-18. NMED would like them checked.
8. 8260 at some laboratories include the analysis of MTBE; therefore MTBE was not included in places that list 8260. I will check with the lab that NRC uses and include MTBE as necessary.
9. General Chemistry to NMED does not have a specific definition or meaning, so I specified the general chemistry parameters as major cations and anions... If OCD has a definition for General Chemistry let us know.

Changes within Table

11. For annual sampling, does OCD have a preference when annual sampling is to occur? NMED was thinking the spring.
12. MW-53 and 54 1a.... The analytical suite is from NMED's post closure care permit. The analyte list in Method 8260 is not needed. Historical sampling has determined the analyses listed in Method 8021 are the ones of concern.
10. I am working on obtaining the utility map of the area.

I think this addresses the major questions. Let me know if you have more questions.

Hope

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**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, March 03, 2006 11:14 AM  
**To:** Monzeglio, Hope, NMENV; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** RE: Navajo- Artesia

Hope:

Hi. After going through your table, the Navajo Refining Wells "Status" table, draft list you presented at our Jan. 24, 2006 meeting at the HWB, and the OCD Discharge Plan, The OCD has the following items for your consideration and possible follow-up communication. In addition, I have attached some minor changes to your table to consider.

1) The following wells appear to be missing from your table:

a) Wells that may need to be included in table are as follows:

Bolton Rd #1  
 Bolton Rd #2  
 Bolton Rd #3  
 Bolton Rd #4  
 KW-3R or KW-3A (in your e-mail dated 2/17/06): Do you mean KWB-3R?  
 KWB-2A  
 OCD-1R  
 RA-1227 (why did HWB/OCD leave this well out of monitoring? Should it be included?)  
 RA-1331 (are the RA wells the same well?)  
 RA-6975 (are the RA wells the same well?)  
 RW-16-18 (new wells not included in the OCD permit?)

2) Some questions on your table:

- a) Has MTBE been removed for some of the wells or should it be included for all well monitoring?
- b) Should we consider changing "major cations & anions" to "Gen. Chemistry?"

3) Notes from Jan. 24, 2006 meeting w/ HWB:

- a) HWB following up on utility map of area?
- b) Well abandonment proposals to HWB/OCD required before abandoning wells?
- c) Some RA (San Andreas Fm.) wells are shallow (~30 ft. bgl) and other are deep?
- d) Be sure to include water supply wells for homes in monitoring?
- e) Need free-product recovery well south of MW-48 and possible investigation there?
- f) MW(s) south of MW-58 to bracket southern fringe of plume?
- g) Update map to show 3 flush mount wells west of railroad tracks and E. of Hwy. 285 (i.e., MWs 50, 53 & another unidentified wells) at upgradient region of site?

4) Notes for OCD in the new discharge permit:

- a) OCD sent letter to Darrell 3/3/06 giving him heads up on discharge permit expiration date of 10/21/06 and Section H "Additional Requirements", which included additional investigations and well or trench installations, etc. for status of completion in advance of permit renewal approval.
- b) Well coverage on the west side of park?
- c) Propose 2 new locations for upgradient wells?
- d) RW-16-18 (new wells not included in the OCD permit?)

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM

3/3/2006

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(Pollution Prevention Guidance is under "Publications")

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Tuesday, February 28, 2006 11:25 AM  
**To:** Chavez, Carl J, EMNRD; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** Navajo

Carl and Wayne

attached is the draft sampling monitoring schedule for Navajo. Below are some comments that will be included in NMED's cover letter. I plan on having the letter and schedule finalized to be sent out on March 6 (Monday). Please let me know if you have any changes or additions.

1. Semi-Annual groundwater monitoring must be conducted 30 days prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season (fall and spring). The Permittee must use sampling methods approved by the NMED and OCD.
2. The following field parameters must be collected from all wells sampled during each monitoring event:  
temperature, specific conductivity, pH, dissolved oxygen, and oxidation-reduction potential (ORP).
3. The Permittee must collect depth to water (DTW) and depth to product (DTP) measurements in all monitoring and recovery wells during each sampling event. DTW and DTP measurements must also be collected in all wells not sampled. All measurements shall be recorded to the nearest 0.01 foot. The Permittee should not collect samples for chemical analysis from wells containing separate phase hydrocarbons (SPH).

Thanks

Hope

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3/3/2006

**Chavez, Carl J, EMNRD**

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, March 03, 2006 2:43 PM  
**To:** Chavez, Carl J, EMNRD

Carl below is a copy of the email correspondence with J. Byrd from Navajo about the recovery trenches. I was unable to forward it so I copied and pasted it. See below

Yes, they are the same.

Jefferson L. Byrd

Sr. Environmental Specialist

Navajo Refining - Environmental Department

Artesia New Mexico

Office - 505-746-5468

Cell - 505-703-5068

---

**From:** Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]  
**Sent:** Thursday, January 26, 2006 2:04 PM  
**To:** Byrd, Jeff  
**Subject:** RE: Recovery trenches

Jeff

Thanks for the quick response, yes it does help (I was not sure if there were trenches named separately from RW 1-18). So to clarify the Bolton Road trenches # 1-4 are actually RW-11- RW-14?

Thanks

Hope

---

**From:** Byrd, Jeff [mailto:jeffbyrd@navajo-refining.com]  
**Sent:** Thursday, January 26, 2006 1:59 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Moore, Darrell  
**Subject:** RE: Recovery trenches

Hope:

The Recovery Trenches are denoted with the "RW" and are numbered from RW-1 to RW-18. The length of the trench is generally shown on the map as the line through the riser. If a trench has multiple risers (RW-16) they are denoted with additional dots in the line. I hope this helps.

3/3/2006

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# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

March 3, 2006

Mr. Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company L.P.  
P.O. Box 159  
Artesia, New Mexico 88211-0159

Re: Discharge Permit GW-028  
Artesia Refinery

Dear Mr. Moore:

The Oil Conservation Division (OCD) is writing to remind Navajo Refining Company L.P. that it's groundwater discharge permit (permit) renewal for the Navajo Refining Company L.P. Artesia Refinery GW-028 located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico will expire on October 21, 2006. In addition, after reviewing the "Attachment to the Discharge Permit GW-028 Approval" (April 17, 2003) section of the permit, the OCD is requesting the status of completion of Section H "Additional Requirements" below.

H. Additional Requirements:

- i. Up-date all on-site and off-site maps, showing the current status of all recovery/monitor/ domestic, irrigation wells and pertinent features including the stormwater basins.
- ii. Navajo shall investigate the area between monitor well KWB-2R and the refinery to determine if a new remediation recovery trench system is required in this area. The results of this investigation shall be submitted to the OCD by July 15, 2003.
- iii. Replace MW-1 at the evaporation ponds.
- iv. If phase separated hydrocarbons are found east of the Bolton Road recovery system, then a new recovery system shall be installed in this area including down-gradient monitor wells. Any wells that reveal contaminants that exceed WQCC groundwater standards shall be reason to install addition wells to determine the

**Chavez, Carl J, EMNRD**

**From:** Price, Wayne, EMNRD  
**Sent:** Tuesday, February 21, 2006 12:59 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** FW:

make sure this gets in the file

**From:** Moore, Darrell [mailto:Darrell.Moore@navajo-refining.com]  
**Sent:** Friday, February 10, 2006 9:13 AM  
**To:** Price, Wayne, EMNRD  
**Subject:** RE:

I did get it. Thanks Wayne

**From:** Price, Wayne, EMNRD [mailto:wayne.price@state.nm.us]  
**Sent:** Friday, February 10, 2006 7:41 AM  
**To:** Moore, Darrell  
**Subject:** FW:

The OCD is in receipt of the hydro test procedure for the Artesia Navajo refinery wastewater line that lies between the refinery and Class I injection wells. OCD hereby approves of the test procedure with the following additional conditions:

1. The pressure chart recorder shall be set on an 8 hour clock setting for complete 360 degree revolution. The maximum span size of the chart shall be 1000 psig with a maximum of 10 pound resolution increments.
2. Each pressure recording location shall have an isolation valve and pressure gauge in parallel with a pressure recorder. Each tested section shall have a testing isolation valve at each end of the line. OCD may require gauges at each end of the line.
3. The line shall be isolated from the refinery pumping system during the testing.
4. The line pressure and temperature shall be adequately stabilized and all air pockets purged before beginning the test.
5. At the end of the test period the line shall be bleed down 10 psig to ensure the chart recorder and gauge correlate for sensitivity confirmation.
6. The pressure chart shall have the following information on the chart:
  - a. Date, time start after pressurized and stop time before de-pressurized.
  - b. Printed and signed name and signature of Navajo representative, and OCD personnel who witness test if available.
  - c. The pressure gauge reading at the beginning and end of the test, the reading of the pressure gauge after 10 psi bleed-off, and final bleed-off.
7. The results of the test shall be provided to OCD 30 days after test.

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

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, February 09, 2006 11:20 AM  
**To:** Price, Wayne, EMNRD  
**Subject:** FW:

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.

2/22/2006

Oil Conservation Division, Environmental Bureau  
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(Pollution Prevention Guidance is under "Publications")

---

**From:** Moore, Darrell [<mailto:Darrell.Moore@navajo-refining.com>]  
**Sent:** Thursday, February 09, 2006 8:33 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:**

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company, L.P.  
P.O. Box 159  
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[Darrell.moore@navajo-refining.com](mailto:Darrell.moore@navajo-refining.com)  
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**Chavez, Carl J, EMNRD**

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, February 17, 2006 2:30 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** Navajo GW monitoring Table

Wayne and Carl

I am attaching the table I have created for Navajo's groundwater monitoring plan. I am sure there are some mistakes so please point them out. Please email me any additions or changes OCD would like to make. Note there are some well name changes e.g. KW-3R is the replacement KW-3A. Let me know if you have any questions.

Hope

*Handwritten:* KW-3R? → KW-3A

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2/22/2006

**Chavez, Carl J, EMNRD**

---

**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, February 17, 2006 2:57 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** Navajo groundwater monitoring report

Wayne and Carl

A follow up to my previous email containing Navajo's groundwater monitoring table. NMED is planning on sending an approval with modifications that tells them what they have to sample etc. Navajo is going to have to resubmit a groundwater monitoring work plan with our revisions before the fall groundwater sampling event. That being said we will need to get the comments out soon. My request is for OCD to provide me with your comments/changes to the table as soon as possible.

Thanks

Hope

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### Navajo Refinery Company Monitoring Schedule

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
MW-1R	<sup>3</sup> Semi annual	NMED <i>ocd</i>	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	W. of the Eps
<sup>1</sup> MW-2A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	W. of the Eps
<sup>1</sup> MW-3	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	S. of EP 1 & 2
<sup>1</sup> MW-4A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	S. of EP 1 & 2
<sup>1</sup> MW-5A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	S. of EP 2
<sup>1</sup> MW-6A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	S. of EP 1

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 days prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

*2 gw sample &*

*I think we want well sampled even if product present don't we?*

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1</sup> MW-7A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	S. of EP 3 Replacement of MW-7
MW-8	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	TMD, S. of E. draw btw B and H Rd
<sup>1a</sup> MW-10	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	S. of Eps
<sup>1a</sup> MW-11A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82 btw B & H Rd
<sup>1a</sup> MW-15	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	W. of EP 1
MW-16	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of H Rd and S. of E draw
<sup>1a</sup> MW-18	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, GRO & DRO EPA Method 8015B, SVOC's EPA Method 8310 (Bis (2-ethylhexyl)phthalate (DEHP)), Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. Portion of Refinery E. of the NCL

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1a</sup> MW-18A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310 SVOC, Priority Pollutant Metals, Major Cations, Anions, Nitrates/Nitrites	S. of Eps
MW-20	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of B. Rd, S. of E. draw
MW-21	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of E. draw, btw B & H Rd.
<sup>1a</sup> MW-22A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	S. of Eps
MW-23	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	W. of TEL
MW-25	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of EP, W. of Pecos River, E. of H Rd.
MW-26	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of EP, W. of Pecos River, E. of H Rd.

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.



Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
MW-27	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	E. of H Rd and S. of E. draw
MW-28	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	E. of the SE. Tank Farm Area
MW-29	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	In refinery N. of TEL
MW-39	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	N. of the TEL
MW-41	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	N. of the TEL
MW-42	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	N. of the TEL
MW-43	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	NW. of the TEL

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1a</sup> MW-45	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310 (Bis (2-ethylhexyl)phthalate (DEHP)), Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of Refinery, S. of E draw
MW-46	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals tals, Major Cations& Anions, Nitrates/Nitrites	E. of Refinery, S. of E draw
MW-48	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of SE Tank farm Area
<sup>1a</sup> MW-49	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, GRO & DRO EPA Method 8015B, SVOC's EPA Method 8310 (Bis (2-ethylhexyl)phthalate (DEHP)), Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of Refinery, midpoint btw E. draw and U.S. Hwy 82
MW-50	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	W. of Refinery, E. of U.S. Hwy 285 and N. of U.S. Hwy 82
MW-52	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of the Refinery, S. of U.S Hwy 82

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1a</sup> MW-53	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	W. of Refinery btw U.S. Hwy 285 and RR tracks
<sup>1a</sup> MW-54A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. of NCL
<sup>1a</sup> MW-55	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	E. of NCL
<sup>1a</sup> MW-56	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NE of the Refinery
MW-58	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310 SVOC, Priority Pollutant Metals, Major Cations, Anions, Nitrates/Nitrites	S. of U.S. Hwy 82 and W. of B Rd
<sup>4</sup> MW-61	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	SW of TEL
<sup>4</sup> MW-62	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	SW of TEL

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>4</sup> MW-63	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	SW of TEL
<sup>4</sup> MW-64	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	In Refinery area, N. of U.S. HWY 82
<sup>4</sup> MW-65	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	S. of the SE Tank Farm Area
<sup>4</sup> MW-66	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	E. of the SE Tank Farm Area
<sup>4</sup> MW-67	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, GRO & DRO EPA Method 8015B, Priority Pollutant Metals, Major cations& anions, nitrate/nitrite	E. of the Diesel Tank Farm Area
MW-68	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of E draw, btw D and H Rd.
<sup>1a</sup> MW-70	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	S. of Eps; Renamed from MW-19

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
KWB-1A	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of E draw, W. of B Rd.
KWB-1C	<sup>3</sup> Semi annual	OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of E draw, W. of B Rd.
KWB-P2	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	E. of D Rd, N. of U.E. Hwy 82
KWB-2R	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of U.S. Hwy 82 on G.G. Armstrong & Son
KWB-3R	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	Replacement well for KWB-3A S. of U.S. Hwy 82 btw B & D Rd.
KWB-4	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	N. of U.S. Hwy 82, W. of B Rd.
KWB-5	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	N. of U.S. Hwy 82, W. of B Rd.

<sup>1</sup>= Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup>= Ground water monitoring wells at the locations of the compliance points

<sup>2</sup>= Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup>= Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup>= New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
KWB-6	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82, W. of B Rd.
KWB-7	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82 btw B & D Rd
KWB-8	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82 btw B & D Rd.
KWB-9	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of U.S. Hwy 82, E. of B Rd.
KWB-10	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of Refinery, S. of E. draw, N. of U.S. Hwy 82
KWB-11A	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82 btw B & D Rd
KWB-12A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of U.S. Hwy 82, E. of B Rd.

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
KWB-13	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of U.S. Hwy 82, W. of B Rd
NP-1	<sup>3</sup> Semi annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE	S. of E. draw, W. of B Rd.
NP-2	<sup>3</sup> Semi annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE	Directly E. of B Rd., S. of E draw
NP-3	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	Directly N. of E. draw, NE. of B Rd.
NP-5	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of Richey Rd, N. of E. Draw, W. of B Rd.
NP-6	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations & Anions, Nitrates/Nitrites	S. of E. draw, W. of B Rd.
NP-7	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310 SVOC, Priority Pollutant Metals, Major Cations, Anions, Nitrates/Nitrites	S. of E draw, btw D & H Rd.

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
NP-9	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of Richey Rd, N. of E. Draw, W. of B Rd.
<sup>1a</sup> OCD-1	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	NW. of EP 6
<sup>1a</sup> OCD-2A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	NW. of EP 6
<sup>1a</sup> OCD-3	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	N. of EP 6
<sup>1a</sup> OCD-4	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	NE. of EP 6
<sup>1a</sup> OCD-5	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	NW of EP-6
<sup>1a</sup> OCD-6	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; Major Cations& Anions, Nitrates/Nitrites	E. of EP-6

<sup>1</sup>= Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup>= Ground water monitoring wells at the locations of the compliance points

<sup>2</sup>= Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup>= Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup>= New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.



Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1</sup> OCD-7A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	SE. of EP-6 Replacement well for OCD-7AR
<sup>1</sup> OCD-8A	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	SE. of EP 3
<sup>1</sup> NCL-32	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. Portion of the Refinery
<sup>1</sup> NCL-33	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. Portion of the Refinery
<sup>1</sup> NCL-34	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. Portion of the Refinery
<sup>1</sup> NCL-44	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. Portion of the Refinery
<sup>1a</sup> NCL-49	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr	NW. Portion of the Refinery

<sup>1</sup>= Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup>= Ground water monitoring wells at the locations of the compliance points

<sup>2</sup>= Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup>= Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup>= New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>1</sup> TEL-1	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	NE. Portion of the Refinery
<sup>1</sup> TEL-2	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	NE. Portion of the Refinery
<sup>1</sup> TEL-3	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	EPA Method 8021 B + MTBE; EPA Method 8310; Bis (2-ethylhexyl)phthalate (DEHP); As; Pb; Cr; GRO; DRO; general Chemistry	NE. Portion of the Refinery
TEL-4	<sup>3</sup> Semi annual	NMED	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, GRO & DRO EPA Method 8015B, SVOC's EPA Method 8310 (Bis (2-ethylhexyl)phthalate (DEHP)), Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	NE. Portion of the Refinery
<sup>2</sup> RW-1	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery
<sup>2</sup> RW-2	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery
<sup>2</sup> RW-3	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery

<sup>1</sup>= Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup>= Ground water monitoring wells at the locations of the compliance points

<sup>2</sup>= Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup>= Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup>= New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>2</sup> RW-4	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> South Portion of the Refinery
<sup>2</sup> RW-5	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> South Portion of the Refinery
<sup>2</sup> RW-6	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> South Portion of the Refinery
<sup>2</sup> RW-7	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery
<sup>2</sup> RW-8	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery
<sup>2</sup> RW-9	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery
<sup>2</sup> RW-10	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> North Portion of the Refinery

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
<sup>2</sup> RW-11	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> Directly W. of B Rd.
<sup>2</sup> RW-12	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> Directly W. of B Rd.
<sup>2</sup> RW-13	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> Directly W. of B Rd.
<sup>2</sup> RW-14	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> Directly W. of B Rd.
<sup>2</sup> RW-15	Annual	OCD	PH, Cond, Temp, ORP, DO	EPA Method 8260, EPA Method 8310, Priority Pollutant Metals, Major Anions, Cations, nitrate/nitrite	<sup>3</sup> South Portion of the Refinery

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

Monitoring Well ID	Sampling Frequency	Required by	Water Quality Parameters	Analytical Suite	Well location
RA 3353	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	S. of U.S. Hwy 82 and E. of B Rd
RA 4196	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	N. of U.S. Hwy 82 and E. of B Rd
RA 4798	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	E. of B Rd, N. of U. S. Hwy 82
Larue well	<sup>3</sup> Semi annual	NMED OCD	PH, Cond, Temp, ORP, DO	VOC's EPA Method 8260, DRO EPA Method 8015B, SVOC's EPA Method 8310, Priority Pollutant Metals, Major Cations& Anions, Nitrates/Nitrites	

Table date: February 20, 2006.

N = North; S = South; E = East; W = West; NE = Northeast; NW = Northwest; SW = Southwest; SE = Southeast; Btw = between

B Rd = Bolton Road; H Rd = Haldeman Road; D Rd = Dirt Road; Hwy = highway

EP = Evaporation Ponds; TMD = Three Mile Ditch; E. draw = Eagle Draw; NCL = North Colony Landfarm;

TEL = Tetra Ethyl Lead Impoundment

DO = dissolved oxygen, ORP = oxygen reduction potential, temp = temperature, Cond = conductivity

<sup>1</sup> = Point of Compliance well monitoring under RCRA Post Closure Care Permit

<sup>1a</sup> = Ground water monitoring wells at the locations of the compliance points

<sup>2</sup> = Recovery Wells shall be sampled if they do not contain measurable phase-separated hydrocarbons

<sup>3</sup> = Semi-Annual sampling must be conducted 30 day prior to the start of the irrigation season and 30 days after the conclusion of the irrigation season.

<sup>4</sup> = New monitoring wells installed during the SWMU/AOC Group 1 Corrective Action Investigation

**Note:** All Recovery Trenches and all wells with phase-separated hydrocarbons (PSH's) shall be checked at a minimum of once per month and recorded on a spreadsheet. The sheet shall be in table form containing all of the recovery wells, date inspected, product thickness measured to .01 inch, amount of product/water recovered. If product is observed then appropriate steps will be taken to recover product as reasonably possible using the best available technology. This information must be provided in the annual groundwater report.

**Chavez, Carl J, EMNRD**

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Friday, January 27, 2006 7:36 AM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** FW: Recovery trenches

The recovery trenches are named RW 1- RW-18. See correspondence below. Let me know if you have questions.

Hope

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**From:** Byrd, Jeff [mailto:jeffbyrd@navajo-refining.com]  
**Sent:** Thursday, January 26, 2006 3:03 PM  
**To:** Monzeglio, Hope, NMENV  
**Subject:** RE: Recovery trenches

Yes, they are the same.

Jefferson L. Byrd  
Sr. Environmental Specialist  
Navajo Refining - Environmental Department  
Artesia New Mexico  
Office - 505-746-5468  
Cell - 505-703-5068

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**From:** Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]  
**Sent:** Thursday, January 26, 2006 2:04 PM  
**To:** Byrd, Jeff  
**Subject:** RE: Recovery trenches

Jeff

Thanks for the quick response, yes it does help (I was not sure if there were trenches named separately from RW 1-18). So to clarify the Bolton Road trenches # 1-4 are actually RW-11- RW-14?

Thanks

Hope

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**From:** Byrd, Jeff [mailto:jeffbyrd@navajo-refining.com]  
**Sent:** Thursday, January 26, 2006 1:59 PM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Moore, Darrell  
**Subject:** RE: Recovery trenches

Hope:

The Recovery Trenches are denoted with the "RW" and are numbered from RW-1 to RW-18. The length of the trench is generally shown on the map as the line through the riser. If a trench has multiple risers (RW-16) they are denoted with additional dots in the line. I hope this helps.

Jefferson L. Byrd  
Sr. Environmental Specialist  
Navajo Refining - Environmental Department

1/27/2006

Artesia New Mexico  
Office - 505-746-5468  
Cell - 505-703-5068

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**From:** Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]  
**Sent:** Thursday, January 26, 2006 1:26 PM  
**To:** Byrd, Jeff  
**Subject:** Recovery trenches

Jeff

I have another question. I know Navajo has recovery trenches, could you provide me with the names of the trenches when you get a chance. Thanks

Hope

Hope Monzeglio  
Environmental Specialist  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505  
Phone: (505) 428-2545  
Fax: (505)-428-2567  
[hope.monzeglio@state.nm.us](mailto:hope.monzeglio@state.nm.us)

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1/27/2006

**Chavez, Carl J, EMNRD**

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Wednesday, January 25, 2006 12:40 PM  
**To:** Chavez, Carl J, EMNRD; Price, Wayne, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** FW: Monitoring well questions

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**From:** Byrd, Jeff [mailto:jeffbyrd@navajo-refining.com]  
**Sent:** Wednesday, January 25, 2006 10:55 AM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Moore, Darrell  
**Subject:** RE: Monitoring well questions

Hope:

See below for the answers to your questions.

Thanks;

Jefferson L. Byrd  
Sr. Environmental Specialist  
Navajo Refining - Environmental Department  
Artesia New Mexico  
Office - 505-746-5468  
Cell - 505-703-5068

---

**From:** Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]  
**Sent:** Wednesday, January 25, 2006 9:40 AM  
**To:** Byrd, Jeff; Moore, Darrell  
**Cc:** Cobrain, Dave, NMENV; Price, Wayne, EMNRD; CarlJ.Chavez@state.nm.us  
**Subject:** Monitoring well questions

Jeff

I have some more well questions:

1. Does KWB-13 located south and slightly east of the refinery (south of G.G. Armstrong & Son and HWY 82) still exist? What does KWB stand for? **[Jeff Byrd]** Yes it does exist. KWB is the initials of the consultants that installed the wells.
2. I think we have discussed this well issue before however, OCD visited the refinery on 10/26/05 and during the site visit they were made aware that three wells existed between highway 285 and the refinery. This area shows one well MW-53. Were there wells proposed for this area and were never installed? **[Jeff Byrd]** I am not sure what document you are reading, however it could be that OCD was referring to the three up gradient wells (MW-50, MW-51, and MW-53). Monitoring well MW-51 no longer exists.
3. Is MW-7A a replacement for MW-7, or did MW-7 ever exist. I have the same question for MW-22A, is this a replacement for MW-22? **[Jeff Byrd]** No they are not replacements. When these wells were put in, it was expected that a second well would be placed next to it into a deeper zone (~10 to 15' deeper). Not all of the second wells were installed, however, at MW-1A two additional wells were installed (1B and 1C).
4. Lastly, MW-70 is located south of the evaporation ponds. NMED has an older map that identifies MW-19 in this area. Is MW-70 a replacement for MW-19, does MW-19 still exist in this area, was it abandoned, and/or is our older map mislabeled? **[Jeff Byrd]** Since the evaporation ponds are a separate source from the Refinery and are 3 miles apart, they have been treated as two separate sites. In doing so, consultants created some overlap while naming the wells over the years. However, to make things

1/25/2006



clearer for the last round of questions, we determined it easier to combined the two maps. In doing this we had to make a few changes. Since "MW-19" was used in the refinery and at the ponds we had to change one. Since we have used the well at the refinery more recently we changed the name of the well located at the ponds to MW-70.

Thanks for your help

Hope

Hope Monzeglio  
Environmental Specialist  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, BLDG 1  
Santa Fe NM 87505  
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**Chavez, Carl J, EMNRD**

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, January 23, 2006 8:00 AM  
**To:** Bratcher, Mike, EMNRD  
**Subject:** RE: Drum storage North of Navajo Refinery

Mike:

Yes, it is good to follow-up on the drums for ownership and to make sure they are empty or determine what hazardous substances, if any, they may contain. If they are empty, and the property is zoned residential, seems like there may be blight issues if there is a local ordinance.

Let me know if we need to refer the location over to our NMED- Hazardous Waste Bureau inspectors for field inspection. Thanks. :)

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Bratcher, Mike, EMNRD  
**Sent:** Friday, January 20, 2006 1:57 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Drum storage North of Navajo Refinery

Carl,

Hello and welcome aboard. The lot being used for drum storage belongs to a Raul V. Chavarria. It is zoned residential and is in the county (not city) limits. I contacted Randy Galindo who is the Eddy County Safety person. He referred me to Environmental Dept. in Carlsbad. I spoke with Elmer Smith there and he is going to contact their person responsible for that area, Lynn Murray. There is no telling what is or has been in the drums, so someone probably needs to investigate. I don't believe it is anything we would have authority over, but if I bounce it off of enough agencies, I am bound to find the right one. Let me know if you need any more info on it.

Mike Bratcher  
NMOCD District II



**BILL RICHARDSON**  
GOVERNOR

**State of New Mexico**  
**ENVIRONMENT DEPARTMENT**

**Hazardous Waste Bureau**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, New Mexico 87505-6303**  
**Telephone (505) 428-2500**  
**Fax (505) 428-2567**  
**www.nmenv.state.nm.us**



**RON CURRY**  
SECRETARY

**DERRITH WATCHMAN-MOORE**  
DEPUTY SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

November 28, 2005

Darrell Moore  
Environmental Manager for Water and  
Waste  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

RECEIVED  
NOV 30 2005  
OIL CONSERVATION  
DIVISION

**SUBJECT: REQUEST FOR WELL ABANDONMENT INFORMATION**  
**NAVAJO REFINING COMPANY, ARTESIA, REFINERY**  
**EPA ID No. NMD048918817**  
**HWB-NRC-05-001**

Dear Mr. Moore:

New Mexico Environment Department (NMED) has received and appreciates Navajo Refining Company's (Permittee) providing NMED with a site plan displaying all the well locations and updating the list identifying *Navajo Refining Wells* (Well List). During review of the site plan and Well List, it appears some wells have been abandoned. NMED requires the Permittee to submit a list containing all wells that have been abandoned at the facility. The list must be accompanied with a narrative that specifically describes how each well was abandoned. NMED is also requiring the submittal of the well construction details and well log for the replacement well of RA-1331 east of the Pemberton House.

All future well plugging and abandonment methods and associated certifications must be conducted in accordance with *Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells* [19.27.4 NMAC].

Mr. Moore  
Navajo Refining Company  
November 28, 2005  
Page 2 of 2

The Permittee must submit the well abandonment list and information for replacement well RA-1331 to NMED on or before March 1, 2006.

In addition, if changes occur to the site plan features or structures, well list, or wells are abandoned list the Permittee must provide updates on a yearly basis and submit the updates to NMED by December 30<sup>th</sup> of each year. Updates to the well list and well abandonment list must include well logs and construction details and descriptions of well abandonment procedures and activities, respectively.

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,

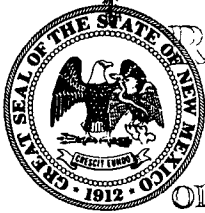


Hope Monzeglio  
Project Leader  
Permits Management Programs

HM

cc: \*D. Cobrain, NMED HWB  
W. Price, NMEMNRD OCD  
D. Whaley, Navajo Refining Company

File: Reading File and NRC 2005 File  
\* Electronic distribution



BILL RICHARDSON  
GOVERNOR

OIL CONSERVATION  
DIVISION

State of New Mexico  
**ENVIRONMENT DEPARTMENT**

Hazardous Waste Bureau

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RON CURRY  
SECRETARY

DERRITH WATCHMAN-MOORE  
DEPUTY SECRETARY

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

September 19, 2005

Darrell Moore  
Environmental Manager for Water and  
Waste  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

James E. Resinger  
Vice President  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**SUBJECT: REJECTION OF UPDATED FACILITY SITE PLANS  
NAVAJO REFINING COMPANY, ARTESIA, REFINERY  
NMD048918817  
HWB-NRC-05-001**

Dear Messrs. Moore and Resinger:

The New Mexico Environment Department (NMED) has received the site plans submitted on behalf of Navajo Refining Company (the Permittee). These plans were requested by NMED in its *Approval with Modifications Groundwater Monitoring Work Plan*, dated March 17, 2005.

NMED hereby disapproves the site plans. Accurate site plans are needed in order for NMED and the New Mexico Energy Minerals Natural Resource Department Oil Conservation Division (OCD) to view existing well locations to provide a single set of groundwater monitoring requirements as requested by the Permittee. NMED received the site plan from the Permittee on June 28, 2005 and has determined the submittal deficient for the following reasons. The Permittee must apply comments a through g below to future submittals of site plans, maps, and figures:

Messrs. Moore and Resinger  
Navajo Refining Company  
September 19, 2005  
Page 2 of 2

- a) Figure 1 is titled *Site Map Navajo Refining Artesia, NM*, dated 3-17-95 while Figure 2 is titled *Evaporation Ponds Site Map* and dated XXX. Neither figure contains an accurate date. All future site plans, figures, and maps must contain accurate preparation dates to allow NMED or other recipients to view changes and ascertain the currency of the maps or plans.
- b) Figure 1 and Figure 2 do not provide the locations of all existing wells. Figure 1 does not show the locations of three background wells located west of the refinery near U.S. Highway 285 and seven monitoring wells that were installed during the SWMU/AOC Group 1 Corrective Action Investigation that took place in late April to early May 2005. All future site plans must contain all existing and newly installed wells.
- c) All future submittals must accurately and legibly depict all existing well locations, well designations, symbols, scales, and surrounding features. Figure 1 and Figure 2 contain the following discrepancies:
  - The scales exhibited in Figure 1 and 2 appear to be the same, however, they do not appear to be accurate and cannot be used interchangeably. The wells presented in both figures are depicted in somewhat different locations. Site plans containing the same features must be consistent and exhibit the same scales, symbols, and features.
  - The wells depicted in Figures 1 and 2 contain different names for what appear to be the same wells (e.g. Figure 1 contains 30, 45, KWB-1A, KWB-1B...Figure 2 identifies the same wells as MW-30, MW-45, K1-A, K1-B). Figures that contain the same wells must use the same well identification. If the figures identify the same well with different designations then the wells will be viewed as being different wells. The Permittee must be consistent when identifying well designations.
  - The wells depicted in Figures 1 and 2 contain different well symbols but are identified with the same names. It is unclear whether there are two different well types at the same location with the same name (e.g. Figure 1 contains NP-3 and NP-4 denoted as a square with an x in the middle while figure 2 denotes NP-3 and NP-4 as a circle with a dot in the middle). Figures containing wells with the same designation but different symbols will be viewed as being different wells. The Permittee must be consistent with symbols used to represent well locations.
- d) The legend in Figure 2 does not define the well symbol for a circle with a dot in the middle (e.g. NP-3). The Permittee must provide the explanation for all symbols used on maps or site plans.

Messrs. Moore and Resinger  
Navajo Refining Company  
September 19, 2005  
Page 3 of 3

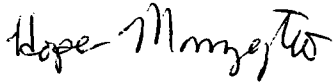
- e) Figure 2 is missing surrounding features. This map cannot be used to determine gradients or the extent of contaminant migration. The Permittee must provide surrounding site features on all maps or site plans.
- f) Figure 2 includes "OCD" wells around the evaporation ponds; however, these well designations are not legible. All maps or site plan notations must be legible.
- g) Figure 2 identifies MW-1 located slightly northeast of Evaporation Pond 1. A December 4, 2001 letter titled *Monitor Well Request* identifies MW-1 as unusable. The *Three Mile Ditch and Evaporation Ponds Corrective Action Investigation Report* makes reference to a MW-1R. It appears that MW-1R may be a replacement well for MW-1. The site plan must reflect any name changes or well status changes. The Permittee must explain this discrepancy and provide NMED with the correct well designation. If MW-1 is no longer in use, the Permittee must provide NMED with the procedures and protocols that were followed for plugging and abandoning the well. In addition, the Permittee must inform NMED of any well replacement and well identification changes. All changes must be reflected in all site plans, figures, and maps submitted to NMED.

The updated site plan must be submitted to NMED by October 17, 2005. If the site plan is not received at that time, NMED will issue groundwater monitoring requirements independent of OCD groundwater monitoring requirements. The Permittee may also be subject to enforcement actions, including civil penalties. Be advised the updated site plans are a requirement of the Post-Closure Care Permit and were initially due 120 days after the effective date of the Permit and April 5, 2004, respectively.

Messrs. Moore and Resinger  
Navajo Refining Company  
September 19, 2005  
Page 4 of 4

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,

A handwritten signature in cursive script that reads "Hope Monzeglio".

Hope Monzeglio  
Project Leader  
Permits Management Program

HCM:hcm  
[HWB-NRC-05-001]

cc:    \*John Kieling, NMED HWB  
          \*D. Cobrain, NMED HWB  
          W. Price, NMEMNRD OCD  
          M. Clifton, Holly Corporation  
          D. Whaley, Navajo Refining Company

File: Reading File and NRC 2005 File  
      \* Electronic distribution





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**RON CURRY**  
SECRETARY

**DERRITH WATCHMAN-MOORE**  
DEPUTY SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

September 14, 2005

**RECEIVED**  
**SEP 16 2005**  
**OIL CONSERVATION**  
**DIVISION**

Darrell Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88211-0159

**SUBJECT: NOTICE OF DEFICIENCY (NOD)**  
**THREE MILE DITCH AND EVAPORATION PONDS CORRECTIVE**  
**ACTION INVESTIGATION REPORT**  
**NAVAJO REFINING COMPANY NMDO48918817**  
**HWB-NRC-05-002**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) is in receipt of the Navajo Refining Company (Permittee) report entitled *Three Mile Ditch and Evaporation Ponds Corrective Action Investigation Report*, dated December 2004, and hereby issues this notice of deficiency (NOD). The Permittee must address the comments herein and submit a revised investigation report within 90 days of receipt of this NOD. The revised investigation report shall be accompanied with a response letter that details where all revisions have been made cross-referencing NMED's numbered comments. All requirements established in this NOD must be applied to this and all future investigation reports.

## General Comments

1. The report indicates that an assessment of human health was conducted and the assessment was applied to various aspects of risk throughout the document. Future investigation reports must only present the results (data) from the investigation and not formulate conclusions before identifying what contaminants are present.

----- If the Permittee wishes to provide a risk assessment they may do so in a separate document or as an appendix to the investigation report. References to a risk assessment shall be presented only in the Summary and Conclusions section of an investigation report as stated in Appendix E, Section E.3.j of the Post Closure Care Permit (Permit). Section E.3 of the Permit outlines the components of the investigation report. All detections of contaminants must be reported. Data cannot be eliminated based on risk in an investigation report.
2. The Report addresses only current conditions and current land uses. However, if performing a risk assessment, EPA risk assessment guidance (*Risk Assessment Guidance for Superfund, Volume I Human Health Evaluation Manual*, December 1989) clearly indicates that the risk assessment must be based upon an estimate of the reasonable maximum exposure expected to occur under both current and future land use conditions. While it is understood the Permittee owns the property, it is not clear if this area will be restricted for future use and utilized for industrial purposes only. The Permittee must include a discussion of the potential future land uses (e.g., livestock grazing or other agricultural uses) of Three Mile Ditch (TMD) and the Evaporation Ponds (EP).
3. This comment applies to a risk assessment and the information must not be presented in an investigation report. In order to assess whether there is any potential risk to human health, concentrations of detected constituents were compared to a critical soil screening value (CSSL). The CSSL used the lowest of either the NMED industrial screening level, the NMED construction screening level, or the soil-to-groundwater migration screening level based on a dilution attenuation factor (DAF) of 20. While this may appear to be a conservative approach, it is not a technically sound approach. A risk assessment should be used to establish cleanup levels and not eliminate data that are perceived to be outliers.
  - a. The New Mexico soil screening levels (NM SSLs) are not truly risk-based numbers. The determination of the SSL typically incorporates either a State or Federal Maximum Contaminant Level (MCL) or a tap water preliminary remediation goal, if an MCL is not available. However, MCLs are a balance of risk and technology and can not be used to estimate risk. The NM SSLs are used

to determine if a contaminant is present at a sufficient concentration to migrate to groundwater. Therefore, the use of NM SSLs should not be used to assess risk or exposure to human health. The Permittee must compare all analytical soil results to one receptor within the NM SSLs and not compare the data to various receptors (e.g., Industrial/Occupational, Construction Worker, DAF 20). (See NMED Comments # 3 e., 16, and 34. m)

- b. In the report, the Permittee compared individual concentrations to the CSSL, although there was no assessment of cumulative risk and no assessment of carcinogenic risk versus noncarcinogenic hazard. Both risk and hazards can be cumulative and should be evaluated as such. While concentrations may be just below a risk-based number when evaluated on an individual constituent basis, the combined or overall risk/hazard may exceed health-based limits (Cancer risk of  $1E-05$  and Hazard Index of 1.0).
  - c. A risk assessment must develop exposure point concentrations for each constituent in each area. For a risk screen, typically the maximum detected concentration is applied; however, the 95% upper confidence limit (UCL) on the mean may be appropriate.
  - d. When performing a risk assessment, a table must be provided that clearly shows the comparison to appropriate risk screening levels, as well as the estimation of the overall risks and hazards.
  - e. It is not appropriate to mix risk-based screening numbers for industrial scenarios with the construction scenarios. These two scenarios incorporate different assumptions and exposure parameters and should be evaluated as two separate receptors.
4. The Permittee concludes in the report that the levels of contaminants in soil will not impact groundwater. However, comparison of contaminant concentrations in soil to the NM SSLs was not provided and the evaluation included a mix of risk screening numbers and NM SSLs. If the Permittee chooses to evaluate the levels of contaminants in relation to soil to groundwater migration then the appropriate dilution attenuation factor (DAF) must be used.
5. The Permittee must provide potentiometric maps depicting groundwater elevations collected from monitoring wells during the most recent investigation and previous groundwater monitoring events in accordance with Section 3.2.2 of the Permit.

6. Future investigation reports must not apply one acronym (e.g. CSSL and Groundwater Standard (GWS)) for multiple soil screening levels and groundwater standards. The Permittee must clearly define the standard being applied and the acronym used in the report for that standard. For example, page 6-11, paragraph 4 states "[f]our individual samples from three borings exceeded the CSSL of 19.2 mg/kg for chromium VI..." It is unclear which of the three CSSL (industrial, construction, or DAF 20) was exceeded. The Permittee must revise the report to state the standard being applied. (See NMED comments # 16 and 34. m). The Permittee also must provide NMSSLs for all detected constituents for residential land use for comparison purposes.

### Specific Comments

7. **Executive Summary, page 1, paragraph 3;** The report indicates human and ecological exposures to potentially contaminated TMD soils is unlikely because the ditch is covered.

**NMED Comment:** The Permittee does not discuss in the report the thickness or type of cover currently overlying the contaminated soil. Exposure to human and ecological receptors could occur, regardless of the cover, if the thickness of cover is shallow (e.g., less than 6 inches for humans and less than 2 feet for animals). In addition, the report does not address ecological receptors. The Permittee must provide additional information about the thickness and type of cover placed over the contaminated soil in TMD. The Permittee must also discuss the potential for human and ecological exposure to soil within the TMD, including burrowing animals, phytotoxicity and the potential for damage to the cover.

8. **Executive Summary, page 2, paragraph 4:** "Groundwater along TMD is of poor quality with average TDS levels near 6,000 mg/L and nitrates/nitrates up to 32 mg/L (9.1 mg/L avg.) from agricultural operations, making minor exceedances for selenium relatively inconsequential."

**NMED Comment:** (Note the same quote is stated in Section 7.1.2 Conclusions, page 7-4, paragraph 2). The Permittee must provide the following information:

- a) Explain how it was determined poor groundwater quality due to total dissolved solids (TDS) and "nitrates/nitrates" levels are a result from agricultural operations and are not a result of refinery operations.
- b) Explain how TDS, the presence of nitrates in groundwater, and agricultural operations are related to inconsequential exceedances of selenium. The Permittee shall also define the term "minor."

- c) The Permittee must be aware that TDS levels below 10,000 mg/L are subject to regulation under the WQCC's standards and their RCRA Permit.

9. **Executive Summary, page 3, paragraph 4:** In reference to the limited soil removal from comment # 10 above, The Report further states: "Removed solids will be placed in Evaporation Pond 2....." (Also addressed on p. 8-1, paragraph 1)

**NMED Comment:** The Permittee must be aware by disposing remediation waste at Evaporation Pond 2, this regulated unit must then be managed as a corrective action management unit (CAMU). Construction and management of the CAMU must also be addressed in a permit modification. (See Section 3.2.3.d of the Permit)

10. **Executive Summary, page 4, paragraph 1:** The report states four or five monitoring wells immediately downgradient from Pond 1 have minor concentrations of organics and six downgradient monitoring wells contain arsenic exceedances. The low level of organics and distribution of the arsenic exceedances suggest the ponds are no longer a continuing source to groundwater contamination.

**NMED Comment:** The Permittee must provide an explanation how it was determined the ponds are not a continuing contaminant source to groundwater. NMED compared the groundwater arsenic concentration data from the monitoring wells located in the vicinity of the Evaporation Ponds to the Maximum Contaminant Level (EPA MCL) of 10 parts per billion (ppb). The arsenic concentrations exceeded the EPA MCL. In accordance with Permit Section 4.6.3.b.a.i.(b), the Permittee must use the lesser of the Water Quality Control Commission (WQCC) standards or the MCLs. The Permittee must revise the report to compare groundwater data to the standards stated in the Permit section above.

11. **Executive Summary, page 4, paragraph 2:** "The land around the ponds and downgradient from the ponds, over the arsenic plume, is owned by Navajo and there is no risk from exposure by someone using that groundwater source."

**NMED Comment:** It appears from the above statement that the Permittee assumes the groundwater plume is confined to the shallow, upper water-bearing zone. However the report does not provide a clear analysis of the potential for migration of contaminants to the vadose zone and/or the uppermost aquifer. While the groundwater is currently not used for any purposes, The State of New Mexico considers all groundwater with TDS concentrations less than 10,000 mg/L to be a resource. It is not clear if the Permittee has identified trends to determine if the groundwater quality has been consistent over a period of time. Given this uncertainty, it seems reasonable to assume that the groundwater could

be used at some time in the future for at least industrial/agricultural/ranching purposes. It is critical the plume be monitored and the direction of flow, rate of migration, etc., be determined. In the event the plume is migrating, controls must be in place to ensure that usable groundwater supplies for off-site users are not contaminated. Furthermore, the fact the Permittee owns the land is irrelevant because the plume has the potential to migrate off Navajo's property and under privately owned land. As most of the land use surrounding the site is agricultural, it is plausible to assume that neighboring farmers use groundwater for irrigation/cattle purposes. The Permittee must delineate the plume and discuss the plume's rate of migration and likelihood of migrating off-site.

12. **Executive Summary, page 4, paragraph 2:** "[g]eneral water quality for groundwater in the vicinity of the ponds is very poor. With an average TDS of about 8,000 mg/L, and a 95% UCL for TDS in upgradient and downgradient wells at 12,000 mg/L, groundwater in the area arguably exceeds the 10,000 mg/L level for application of drinking water standards."

**NMED Comment:** While groundwater is currently not used for any purposes, all waters below 10,000 mg/l TDS are protected under the WQCC regulations. NMED reviews the actual data and does make determinations based on averages or the UCL. Furthermore, how the UCL was determined and applied is questionable (See NMED comment #26).

When reviewing the analytical results individually TDS do not exceed the WQCC standard of 10,000 mg/L in most areas. Only five wells exceed the WQCC standard for TDS located on the eastern portion of the EP. The Permittee cannot assume that TDS values below 10,000 mg/L are not protectable. In addition, it is not clear whether or not the TDS concentrations that exceed 10,000 mg/L were caused by discharge to the Evaporation Ponds.

13. **Executive Summary, page 4, paragraph 4:** "[m]ethylene chloride was detected above the CSSL in Pond 2; however, since methylene chloride is not commonly used in refineries this is likely a laboratory artifact."

**NMED Comment:** NMED agrees, methylene chloride is a common laboratory "artifact," however; methylene chloride will be considered a possible site contaminant until the Permittee proves otherwise. The Permittee must provide NMED with evidence that methylene chloride is a laboratory contaminant.

14. **Executive Summary, page 5, paragraph 4:** “[e]levated levels of arsenic in some downgradient wells indicate there may have been some impact from arsenic in the past, although it is not clear the source was necessarily the ponds. Since the ponds are now dry they should not pose a source of continuing leaching or release to groundwater.”

**NMED Comment:** Dry evaporation ponds are not excluded from being considered a source of contamination. It is possible for contaminant solids in the evaporation ponds to have contributed to groundwater contamination; therefore, the arsenic in the soil may still be a contaminant source to groundwater. The Permittee must describe how it was determined the ponds are not the continuing source of contamination. Because the report does not identify a source of groundwater contamination, the Permittee must discuss whether any future investigations will determine the source for the groundwater contamination. (See NMED comment # 10)

15. **Executive Summary, page 5, paragraph 6:** “[t]his investigation indicates that the closed ponds pose little to no risk and are not impacting groundwater above the level of concern. Therefore, no remediation or engineering controls are necessary for the closed ponds. Navajo proposes to prepare a post-closure plan to maintain the pond area to include deed recordation; maintenance of dikes, fences and signs; and routine inspections.”

**NMED Comment:** The Permittee is required to comply with the conditions included in 20.4.1.500 NMAC incorporating 40 CFR 264.228 and 20.4.1.600 NMAC incorporating 40 CFR 265.228. The Permittee must provide justification of how and why this investigation indicates the closed ponds “pose little to no risk” to groundwater above a level of concern, achieve compliance with the requirements for closure and post closure included in 20.4.1.500 and 600 NMAC and that no remediation or engineering controls are necessary.

Prior to preparing an updated post-closure plan, the Permittee must review Section 2.10 General Closure Requirements of the Permit and 20.4.1.500 NMAC, incorporating 40 CFR 264 subpart G Closure and Post Closure and 264 subpart K Surface Impoundments (40 CFR 264.228).

16. **Section 1, page 1-2, paragraph 2:** “[i]ndividual sample analytical results are presented in attached Tables 6 through 14 as well as summary data comparing results to New Mexico or EPA Region 6 soil screening levels or water quality standards.”

**Section 5.3, page 5-3, paragraph 1:** “[a]nalytical values for groundwater sampled from monitor wells or borings were compared to the New Mexico groundwater standards in

Table 5B. These standards are for drinking water and are either the New Mexico Water Quality Standard (WQS) found in NMAC 20.6.2.3103 or the Federal Maximum Contaminant Levels (MCL) where a different New Mexico Standard does not exist. For compounds where neither a New Mexico nor a Federal standard exists, the standard used by NMED is the USEPA Region 9 PRG for tap water (EPA9TAP)."

**NMED Comments:** It is not clear from the above statements, which standard (EPA Region 6 or EPA9TAP) is supposed to be applied and these standards appear to be used interchangeably in the report. For groundwater data review, the Permit requires the use of 20.6.2.3103 WQCC standards and EPA MCL's. EPA Region 6 Tap Water standards shall be applied for those constituents where a WQCC Standard and EPA MCL's have not been established. For soil data review, NMED requires the use of the NM SSLs and OCD soil clean up guidelines and for constituents not on this list, EPA Region 6 soil standards are applied.

The Permittee shall refer to the Permit, Section 4.6.3 Evaporation Ponds that establish standards and concentrations that should be applied to analytical results. The Permittee must revise the report accordingly to incorporate the use of the standards as stated above. (See NMED comment # 34. m)

17. **Section 2.1, page 2-2, paragraph 2:** "The ditch was periodically cleared of surface debris and dredged with a backhoe. The waste material removed from the bottom of the ditch was placed along the berms.

**NMED Comment:** It is not clear if an adequate characterization of the berms has been conducted. The berms contain waste material removed from the bottom of the ditch and could still be a source of contamination. The Permittee must indicate which berms received ditch waste material, what volume of waste material was placed on the berms, and how many years did this practice occur.

18. **Section 2.4, Current Conditions, page 2-5, paragraph 2:** "Previous studies of the pond sediments in the early to mid 1990's indicated the presence of petroleum hydrocarbon constituents and metals. At the time, groundwater monitoring wells directly downgradient from the ponds indicated the presence of benzene and arsenic. However Navajo owns the property above the suspected plume and the groundwater is not used for any purpose."

**NMED Comment:** The New Mexico regulations consider groundwater containing TDS concentrations less than 10,000 mg/L to be a resource requiring protection; therefore, land



ownership and current nonuse of the groundwater is irrelevant. The Permittee also must ensure that contaminated groundwater does not migrate off-site.

19. **Section 4.2.5 Site Conditions, page 4-5:** This section indicates the PID tended to drift throughout the day due to varied temperatures but the PID readings are consistent for samples obtained from individual borings not necessarily between borings.

**NMED Comment:** The Permittee must explain how they determined the photo ionization detector (PID) readings were consistent for samples obtained from individual borings but not necessarily between borings. The Permittee must also describe the differences between the actual boring PID readings and "between" boring PID readings. The Permittee must ensure that the PID and other instrumentation used are frequently and accurately calibrated to guarantee proper results.

20. **Section 4.6, page 4-10, paragraph 3:** "Metal concentrations were typically within background range...."

**NMED Comment:** The Permittee must define "background range," provide the source and identify if this information refers to Table 6B and to which numbers on the table (e.g. average, mean).

21. **Section 5.1, page 5-1, last paragraph:** Reference is made to Appendix H containing complete analytical results.

**NMED Comment:** The Permittee must revise the report to exclude reference to Appendix H or include an Appendix H in the revised report.

22. **Section 5.2, page 5-2, paragraph 3:** "There are no residences near the Evaporation Ponds or three-Mile Ditch and none would be expected in the future because of the proximity to the flood plain of Eagle Creek or the Pecos River."

**NMED Comment:** Since the Permittees' approach is to consider the Dilution Attenuation Factor (DAF) when calculating soil screening levels, groundwater is considered the receptor.

23. **Section 5.2, page 5-2, paragraph 4:** "Given the setting and potential exposure scenarios for Three-Mile Ditch and the Evaporation Ponds, concentration levels for detected compounds in this investigation have been compared with the lower of the Industrial/Occupational screening level or the DAF 20 screening level. The value is

referred to as the Critical Soil Screening Value (CSSL). A table of these values, along with the Construction Worker values, is provided as Table 5A."

**NMED Comments:**

- a) The Permittee must describe the "potential exposure scenarios" that were applied to TMD and the EP's and clarify all activities that were completed in reference to the exposure scenarios. The Permittee must be consistent in the use of exposure scenarios.
- b) The Permittee must clarify if the results were compared with the lower of the Industrial/Occupational and DAF 20 screening levels (two receptors) or the lower of the Industrial/Occupational, DAF 20, and Construction worker levels (three receptors). NMED requires the application of the NM SSL's Residential receptor scenario. If the DAF is being considered, then the Permittee must demonstrate why a DAF of 20 is appropriate. If contamination is present in soils at or beneath the water table, then a DAF of 1 should be used.

24. **Section 5.2, page 5-3, paragraph 2:** "In some cases, the sample quantitation limit (SQL) exceeds the CSSL. After conferring with NMED, it was agreed that in some cases, a value of one-half the SQL would be used for comparison with the CSSL and for calculating the 95 % Upper Confidence Limit (UCL) for a group data for comparison with the CSSL."

**NMED Comment:** NMED agrees with the above statement, however, it should be noted that the application of the SQL and use of 95% UCL should not be applied in an investigation report. (See NMED comment # 26). NMED requires reporting of method detection limits (MDL's) to determine the presence of contaminants practical quantitation limits (PQL's) and may be used as long as there is a clear notation of the relation between the PQL and MDL for all analytes.

25. **Section 6.1.4, page 6-3, paragraph 3,** "Many of the pond wells encountered groundwater as shallow as 2.5 feet so ...."

**NMED Comment:** The Permittee must clarify if the term "pond wells" is synonymous with evaporation pond borings, if not provide the definition of a "pond well" and show those locations on a site map.

26. **Section 6.5.1, Occurrence Summary Tables, page 6-8:** The occurrence summary table provides a definition for the upper confidence limit (UCL), which was determined using a one-tailed test based on a normal distribution.

**NMED Comment:** The use of a one-tailed test based on normal distribution appears to be good science; however, it is unusual for environmental data to be normally distributed. The Permittee must discuss what testing was done to determine that all of the data set distributions were normal and provide the results of these tests. If no data set distribution testing was conducted, then the data must be re-evaluated and the 95% UCL calculated based upon individual data set distributions. The Permittee must also discuss the uncertainty in using censored data with normal distribution testing. It is likely that data sets will have different distributions and different tests may need to be applied. It is suggested that the following guidance be consulted and the software ProUCL (available free on-line) be used: *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*, OSWER 9285.6-10, December 2002. This applied to both background data as well as site data.

27. **Section 6.5.1, Occurrence Summary Tables, page 6-9:** "The Critical SSL or Groundwater Standard" definition addresses the application of USEPA Region 9 tap water standards.

**NMED Comment:** The Permittee must explain why USEPA Region 9 values for tap water were applied. The Permittee must revise The Report to use EPA Region 6 tap water standards.

28. **Section 6.6, page 6-11, paragraph 3:** "The only metals detected in all 24 samples were chromium and lead. Lead was detected in the surface sample from boring location 7 (BSB-7) at concentration of 118 mg/kg,....."

**NMED Comment:** The above quote appears to have a typographical error. The Permittee must clarify if 118 mg/kg should indicate 108 mg/kg as specified in Table 6C BSB-7 (0-2.5 ) feet.

29. **Section 6.7.1, page 6-13, top of page:** The top of page 6-13 identifies the average and geometric mean concentrations for diesel range organics (DRO) concentrations.

**NMED Comment:** The Permittee must explain why the geometric mean was applied to DRO concentrations and provide calculations used to determine the geometric mean.

30. **Section 6.7.3, page 6-15, paragraph 2:** "[n]itrates/nitrites were elevated with a maximum value of 32.4 mg/L and an average of 9.1 mg/L, most likely due to fertilizers used in the surrounding agriculture operations."

**NMED Comment:** The Permittee must explain how they determined the elevated nitrates in groundwater result from agriculture operations and are not the result of refinery operations.

31. **Section 7.1.2, page 7-4, paragraph 1:** "Analytical results demonstrate that historic use of Three-Mile Ditch has resulted in limited and isolated impacts that may be of concern, given the current and future land use."

**NMED Comment:** The Permittee must define the current and potential future land use of TMD and how the isolated impacts may be of concern. The Permittee must also define the type of impacts.

32. **Section 7.1.2 Conclusions, page 7-4, TMD-1:** Elevated levels of lead were detected in soil (7,850 mg/kg) at TMD-1. However, as TMD-1 is located near the center of the refinery and worker exposure to lead is controlled by the health and safety (H&S) program, no remediation of soil is proposed.

**NMED Comment:** The Permittee must explain why the location of TMD-1 and the H&S program prevent remediation of soil with contaminant levels well above the NM SSL's. The Permittee must discuss how exposure to soil will be prevented, including inhalation of resuspended particulates and accidental ingestion of contaminated soil. The Permittee must also clarify how it was determined that the location of TMD-1 is located near the center of the refinery and define the term "near."

33. **Section 7.2.2, page 7-12 -7-13, paragraph 7 and 1:** "[e]levated levels of arsenic in some downgradient wells would suggest that there may have been some impact from arsenic in the past, although it is not clear the source was necessarily the ponds. Since the ponds are now dry they should not pose a source of continuing leaching or release to groundwater. In any case, the poor quality of groundwater would suggest that the water is sufficiently high in TDS that drinking water standards should not apply. No remediation of these pond areas appears warranted."

**NMED Comment:** The Permittee must identify why the arsenic impact was not necessarily the ponds and how it was determined the ponds are no longer a continuing source of leaching or release to groundwater. The Permittee must provide an explanation why drinking water standards should not apply and validate why remediation is not warranted for the EP. Many TDS results in the area of the EP and TMD do not exceed 10,000 mg/kg, therefore the groundwater is still considered protected. (See NMED comment #11)

34. **NMED Comment:** The following comments apply to Tables 3 through 14.

- a) The Permittee must provide the definitions for the acronyms BTOC, BGL found on Table 3C and Table 3D. The Permittee must revise the tables to include these definitions. Future reports must provide acronym explanations in the tables where applicable. The definition of the acronyms must also be viewed fully as some tables contain acronym definitions that are cut off (e.g. Table 7I Page 29 of 30).
- b) The Permittee must provide an explanation why EPA9TAP standards were applied to *Table 5B New Mexico Groundwater Standard* (Table 5B). The Permittee must revise *Table 5B New Mexico Groundwater Standards* to include EPA Region 6 standards where the WQCC and MCL's do not have established standards for a constituent. The Permittee must also explain what process was used to determine what chemicals to list in this table.
- c) NMED compared some of the EPA9TAP standards listed on the first page of Table 5B to the October 2004 EPA9TAP standards. Some standards found in Table 5B were different than the standards listed in the October 2004 EPA9TAP. The following examples include: acetone, acrylonitrile, Bis (2-chloroethyl) ether, 1,3-Butadiene, 2-Butanone (MEK), and tert-Butyl methyl ether (MTBE). The Permittee must provide the source of the standards for the compounds listed above and provide an explanation for the differences.
- d) Table 7G, TMD-3 contains a column heading "EP-81" and TMD-13 contains a column heading "EP-82". The Permittee must clarify what EP-81 and EP-82 represent.
- e) Table 7G - TMD-3 (0-1) - 2 Methylanthalene is shaded yellow indicating, "half the Sample Quantitation Limit (SQL) concentration exceeds the applicable Soil Screening Level." However, a SSL value or source is not listed. The Permittee must explain how it was determined that half the SQL exceeded the SSL when the source or SSL is not listed. This example is found in other tables. The Permittee must revise the tables accordingly.
- f) Table 7G appears to have a typographical error for the standard presented for the analyte carbazole. The table states 6.03E+03 from Region 6-DAF20, however the January 2004 Region 6 has a DAF 1 with carbazole at 3.0E-2. The Permittee must clarify this discrepancy and identify where EPA Region 6 DAF 20 standards are found. If the Permittee calculated this SSL, the calculations must be provided.

- g) Table 7G, some SVOC "result" columns state "NT." The Permittee must define NT and revise the tables to include the acronym and definition. Future submittals must include all abbreviations and acronyms on tables.
- h) Table 7I, the "standard source" column for total dissolved solids states "NMED/MCL." The Permittee must revise the tables to include NMED as the only source. (NMED and the MCL's contain different values for the standard).
- i) Table 7I provides EPA 9TAP for vanadium standard as 2.60E+02 µg/L, however the October 2004 EPA9TAP standards for vanadium is 3.6+01 µg/L. The Permittee must provide the source for the 2.60E+02 µg/L standard or revise the number to reflect the EPA Region 6 Tap Water value.
- j) Table 7I, provides results for monitoring well MW-1R. MW-1R could not be found on Figure 2; however, Figure 2 contains a monitoring well MW-1. The Permittee must clarify if these are two separate monitoring wells or the same well and clarify the correct well name assigned by the refinery. Figure 2 must be updated accordingly.
- k) Table 8D, EP1-1, 2.5-5 feet, shades 2-Methylnapthalene in red indicating that the "detected concentration exceeds the applicable Soil Screening Level." The Permittee must clarify and describe how a result can be shaded red indicating an exceedance when there is no standard notated. This discrepancy appears in other tables (10D, EP5-1 (2.5-5)). The Permittee shall revise the tables accordingly.
- l) Table 10D, EP5-1, (0-2.5) feet contains an exceedance for tetrachloroethene (Perchloroethylene) and was detected in other pond areas. The Permittee must provide a discussion of how tetrachloroethene was used in refinery processes.
- m) The Permittee must revise all tables to compare all analytical soil results to the NM Residential SSL residential receptor scenario. The Permittee may also choose another receptor scenario under the NMSSL's for comparing; however, all analytical results must also be compared to the residential screening levels.
- n) The Permittee must revise all tables containing analytical results for groundwater to include the current WQCC standards and the MCL values whichever is the lowest. (See NMED comment # 10)
- o) The first page of each table contains an itemized list identifying what tables are found within that specific section. However, some of the itemized lists do not contain the correct names for the tables found within the section. (e.g. Table 7, the itemized list

identifies table 7C as "Monitor Wells Groundwater Occurrence Summary" when Table 7C actually summarizes "Three Mile Ditch – DRO and Lead Concentrations with Depth"). The Permittee must revise the itemized lists accordingly.

- p) The report tables break down the groundwater results for xylenes into m,p-xylenes and o-xylenes providing the standard source as the EPA MCL. The Permittee must report m, p and o-xylenes as total xylenes as the EPA MCLs report xylenes as total xylenes and do not break them down into the individual components. The Permittee shall revise the groundwater tables accordingly.

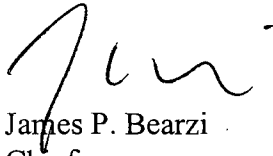
35. **NMED Comment:** The following comments pertain to the analytical data.

- a) The WQCC (as notated in the report as NMED standards) standards apply to dissolved metals with the exception of mercury. It would appear total metals were compared to dissolved metal standards. The Permittee shall revise the tables to compare total metals to the EPA MCL's, which pertain to total metals concentrations.
- b) The Permittee must explain how the SQL was determined and where the definition was obtained. The Permittee must clarify if this number represents the adjusted method detection limit (MDL) found in the laboratory reports and if the SQL and MDL are considered synonymous in the report or whether the SQL is a substitute term for the PQL.
- c) The use of the "U" qualifier is unclear. The Report states the "U qualifier" was applied when a constituent was not detected and will indicate that the listed result is the SQL. However, the SQL designates the "lowest level that the analyte could be detected and accurately quantified." The Permittee must clarify how a constituent that was not detected is notated with a "U" and at the same time the "U" denotes the lowest level that the analyte was detected (the SQL). The Permittee must provide the source of the definitions and applications. NMED prefers that method detection limits (MDLs) and practical quantitation limits (PQLs) as defined in SW.846 be used for consistency.
- d) The Permittee must explain the difference between the "U" qualifier and the "J" qualifier as the definitions presented in the report indicate a constituent was not detected for both. The CD containing laboratory analytical reports do not appear to use a "U" qualifier. The Permittee must also provide the source of these definitions.

Darrell Moore  
Navajo Refining Company  
September 14, 2005  
Page 16

If you have any questions regarding this NOD please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

JPB:hcm  
[HWB-NRC-05-002]

cc: H. Monzeglio, NMED HWB  
J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
W. Price, NMEMNRD OCD  
M. Norman, ARCADIS

Reading File and NRC 2005 File



**Price, Wayne, EMNRD**

**From:** Price, Wayne, EMNRD  
**To:** darrell.moore@navajo-refining.com  
**Cc:** Bratcher, Mike, EMNRD  
**Subject:** Navajo Refinery GW-028 Tank 107 release  
**Attachments:**

**Sent:** Fri 6/24/2005 1:57 PM

Dr. Mr. Moore:

OCD is in receipt of the C-141 dated June 14, 2005. Your request to landfarm in place is hereby denied. Please immediately remove the contaminated soil that was impacted by this spill and dispose of this material at an OCD approved facility. Please provide clean-up verification to this office within 15 days.

Thank you for your cooperation.

Wayne Price-OCD Santa Fe Office

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Co.	Contact	Darrell Moore
Address	501 E. Main, Artesia, NM 88210	Telephone No.	505-748-3311
Facility Name		Facility Type	Petroleum Refinery

Surface Owner	Mineral Owner	Lease No.
---------------	---------------	-----------

LOCATION OF RELEASE

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

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

NATURE OF RELEASE

Type of Release	Casing Head Gas	Volume of Release	450bbls	Volume Recovered	20bbls
Source of Release	TK 107	Date and Hour of Occurrence		Date and Hour of Discovery	6/14/05 9:30am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher		
By Whom?	Darrell Moore	Date and Hour	6/14/05 10:00am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

RECEIVED

JUN 15 2005

OOD-ARTESIA

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A load of casing head gas was being brought into TK 107. The load over filled the tank. Pumps were shut down. Spill was contained in diked area. This product is extremely light and volatilizes like butane. Vacuum truck tried to pick up liquid but had little success.

Describe Area Affected and Cleanup Action Taken.\* Area is about 1000 sq. ft. inside dike at TK 107. Due to ready volatilization, we propose to plow up the area and in effect "land farm" the contaminated soil.

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

Signature: <i>Darrell Moore</i>	OIL CONSERVATION DIVISION		
Printed Name: Darrell Moore	Approved by District Supervisor:		
Title: Env. Mgr.	Approval Date:	Expiration Date:	
E-mail Address: darrell.moore@navajo-refining.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 6/14/05	Phone: 505-748-3311		

\* Attach Additional Sheets If Necessary



**BILL RICHARDSON**  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau*  
*2905 Rodeo Park Drive East, Building 1*  
*Santa Fe, New Mexico 87505-6303*  
*Telephone (505) 428-2500*  
*Fax (505) 428-2567*  
*www.nmenv.state.nm.us*



**RON CURRY**  
SECRETARY

**DERRITH WATCHMAN-MOORE**  
DEPUTY SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

ALL INFORMATION  
DIVISION

March 17, 2005

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

**SUBJECT: APPROVAL WITH MODIFICATIONS**  
**GROUNDWATER MONITORING WORK PLAN**  
**NAVAJO REFINING COMPANY NMD048918817**  
**HWB-NRC-05-001**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of the *Groundwater Monitoring Work Plan* (Work Plan), dated January 2005, submitted on behalf of Navajo Refining Company (the Permittee). NMED hereby approves this Work Plan with the following modifications:

1. Section 4.7.6.a; Background Information of the Permit, states "within 120 days after the effective date of this Permit, the Permittee shall submit, to the Secretary, updated site plans displaying the locations of all existing on-and off-site monitoring wells, recovery wells, piezometers, water supply wells, and other wells located at the refinery, downgradient and cross-gradient from the refinery, and at and in the vicinity of the Evaporation Ponds. All existing wells located between the refinery east to the Pecos River and for the 1,200 feet south of U.S. Highway 82 between Freeman Avenue and the Pecos River shall be presented on the appropriate site plans. The site plans shall include pertinent geographic and geologic features such as drainages, utility corridors, roads, and

watercourses, property boundaries, buildings, recovery trenches, oil and gas wells and other relevant structures.”

The Permittee must submit updated site plans, drilling logs and well construction diagrams accordingly.

2. The Permittee must resubmit Attachment II, Figure 1 to include the following: identify all wells to be sampled during the groundwater monitoring events. All well identifications must be legible, represented in the same font, and identified with a symbol and name (e.g., Figure 1 contains unlabeled recovery wells).
3. The Permittee must resubmit Attachment II, Figure 2 to include the following: accurately identify all well names and locations to be sampled during the groundwater monitoring events. All well identifications must be legible, represented in the same font, and identified with a symbol. The map must contain a bar scale, a north arrow and a legend that defines the symbols presented in the map as provided on Figure 1.

Note: Figure 2 contains duplicate well points and survey elevation points. An explanation shall be provided identifying the placement of the elevation points and how the elevations were collected.

4. The Permittee must submit an additional figure to Attachment II, titled Figure 3. Figure 3 must include all on-and off-site monitoring wells and annotate well status such as active or inactive. Wells listed in the groundwater monitoring plan must be classified by their sampling schedule (e.g. identify the month the wells are sampled).
5. The Permittee must comply with all groundwater monitoring requirements established in the Oil Conservation Division (OCD) Discharge Permit GW-028 dated April 17, 2003. The OCD Discharge Permit requires the annual report to be submitted to OCD by February 28 of each year, NMED must also receive a copy of the annual report at that time.
6. Groundwater monitoring activities and all future revised groundwater monitoring work plans must adhere to the requirements established in Appendix C Sampling Methods and Procedures, Appendix D Chemical and Analytical Procedures, and Appendix E Reporting Requirements.
7. The Permittee must sample the following wells on a semi-annual basis identified in the following Permit Sections:

Darrell Moore  
Navajo Refining Company  
March 17, 2005  
Page 3 of 6

- a. Permit Section 4.6.1.b.a.ii(c): NCL-32, NCL-33, NCL-34, NCL-44, NCL-49, MW-18, MW-45, MW-53, MW-54A, MW-55, and MW-56.
  - b. Permit Section 4.6.2.b.a.ii(c): TEL-1, TEL-2, TEL-3, TEL-4, and MW-49.
  - c. Permit Section 4.6.3.b.a.ii(c): MW-2A, MW-3, MW-4A, MW-5A, MW-6A, MW-7, OCD-7AR, OCD-8A, OCD-1, OCD-2A, OCD-3, OCD-4, OCD-6, OCD-5, MW-10, MW-11A, MW-15, MW-18A, MW-19, and MW-22A.
  - d. Permit Section: 4.7.6.b (i), (ii), and (iii): MW-8 (plant), MW16, MW-23 (plant), MW-28, MW-29, MW-39, MW-41, MW-42, MW-43, MW-46, MW-48, MW-50, MW-52, MW-AE, MW-AH, KWB-P2, KWB-4, KWB-5, KWB-6, KWB-8, KWB-10, KWB-1A, KWB-3A, KWB-7, KWB-9, KWB-11A, KWB-12A, MW-18 (plant), MW-45, MW-25, MW-26, MW-27, RA- 307, RA-314, RA-313, RA-1227, RA-1331, RA-3156, RA-3353, RA-4196, and RA-4798.
8. The Permittee must still sample all wells proposed in the Work Plan that are not listed in the Post-Closure Care Permit or the OCD Discharge Plan. These wells include but are not limited to: KWB-1C, KWB-2R, KWB-3R, MW-49, NP-5, and NP-9.
9. The Permittee must use the following analytical methods:
- a. Section 4.6.1.b.a.i.(a) of the Permit states the chemical analyses to be used at the North Colony Landfarm (NCL). The Permit requires Semi-volatile Organic Compound (SVOC) analysis; NMED is requiring the use of Environmental Protection Agency (EPA) Method 8270 for SVOCs.
  - b. Section 4.6.2.b.a.i.(a) of the Permit states the chemical analyses to be used at the Tetra Ethyl Lead Impoundment (TEL). The Permit requires SVOC analysis; NMED is requiring the use of EPA Method 8270 for SVOCs.
  - c. Section 4.6.3.b.a.i(a) of the Permit states the chemical analyses to be used at the Evaporation Ponds. The Permit requires SVOC analysis; NMED is requiring the use of EPA Method 8270 for SVOCs.
  - d. Section 4.7.6.b.Iv of the Permit states the chemical analyses to be used for the wells listed in Section 4.7.6.b (i), (ii), and (iii). However, one semi-annual sampling event may analyze for Volatile Organic Compounds (VOC) using EPA Method 8021B plus MTBE, major cations/anions. Samples analyzed on an annual basis must be analyzed for VOCs

using EPA Method 8260, Resource Conservation Recovery Act (RCRA) Metals (total metals), Diesel Range Organics (DRO), and major cations/anions. If DRO is detected, the samples must also be analyzed for SVOCs using EPA Method 8270.

10. The following field parameters must be collected from all wells during each sampling event: temperature, specific conductivity, pH, dissolved oxygen, and oxidation-reduction potential (ORP).
11. The approved *SWMU/AOC Group 1 Corrective Action Investigation Workplan*, dated January 2005, includes the installation of seven monitoring wells. Upon installation and initial sampling, the Permittee must incorporate sampling of these monitoring wells into the semi-annual monitoring schedule.
12. The Permittee must collect depth to water and depth to product measurements in all monitoring and recovery wells and trenches during each sampling event. All measurements shall be recorded to the nearest 0.01 foot. The Permittee should not collect samples for chemical analysis from wells containing separate phase hydrocarbons (SPH).
13. The annual report addressed in Section 5.6, "Reporting," of the Work Plan must include the following:
  - a. The Permittee must submit a comprehensive report for each monitoring event.
  - b. Section ii must include all laboratory QA/QC data for the reporting period and address any laboratory data quality exceptions or elevated detection limits. The laboratory results may be submitted in electronic format with the written report.
  - c. Sections iii and iv, water table potentiometric elevation map and product thickness map shall label each monitoring well with the groundwater and product elevation levels.
  - d. Groundwater flow rates and direction of the uppermost aquifer should be determined for the NCL, TEL Impoundment and the Evaporation Ponds (Permit Sections: 4.6.1.b.a.ii (d), 4.6.2.b.a.ii (d), 4.6.3.b.a.ii.(d).)
  - e. A summary table of field observations must be presented. This format shall be consistent with Table 1, "Summary of Field Observations First 2003 Quarterly Sampling," found in the *2003 Annual Groundwater Report Volume II*.

Darrell Moore  
Navajo Refining Company  
March 17, 2005  
Page 5 of 6

- f. The Permittee shall provide an updated list of all wells with the well status, purpose, aquifer type and sample schedule. The format should be similar to the enclosure found in the letter to NMED titled "Monitor Well Request," (dated December 4, 2001).
14. The following comments must be applied to all future groundwater work plans:
- a. The Permittee must include an executive summary or incorporate a paragraph into the "Introduction" Section describing the purpose and scope of the Work Plan as per Appendix E of the permit. This section shall also describe areas where contamination plumes are present.
  - b. The Permittee must expand Section 2.0, "Background," to include a brief summary of any past releases, results of previous investigations, known sources of groundwater contamination and the extent of contamination and all potential receptors.
  - c. The Permittee must include a "Scope of Services" section to include brief descriptions of all anticipated activities during the groundwater monitoring events.
  - d. The Permittee must expand Section 3.0, "Site Conditions," to include surface and subsurface conditions as described in Appendix E of the Post Closure Care Permit. "Surface Conditions" must include a description of topography, climate, soils, and geology at the site but not limited to relative locations. "Subsurface Conditions" must include a description of groundwater at the site and may also summarize previous subsurface investigations. Include relevant soil horizon, stratigraphic information and other relevant information that may influence contaminant transport if applicable.
  - e. The Permittee must expand Section 4.0, "Investigation Methods" to include a brief explanation of groundwater level measurements, groundwater sampling methods, well purging procedures, groundwater sample collection methods, sample handling protocols, chemical analytical testing methods and other proposed investigation and testing methods.
  - f. An "Investigation Derived Waste" section shall be added to address the collection and management of investigation derived waste.
  - g. The Permittee must be consistent with acronyms and phrases in future documents. (e.g. the Work Plan uses the term volatiles, volatile organic compounds, semi volatiles, and semi volatile organic compounds interchangeably; these terms must be specific).

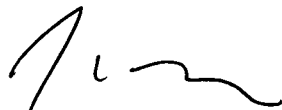
Darrell Moore  
Navajo Refining Company  
March 17, 2005  
Page 6 of 6

15. The Permittee shall schedule their semi-annual sampling event to occur in the spring and the annual sampling event to take place in the fall.
16. Section 4.6.1.b.a.ii(c) states "The Permittee shall monitor the wells listed in 4.1.2.b.a.i(c) and 4.1.2.b.a.ii(b) above....," these sections should be cited as follows: 4.6.1.b.a.i(c) and 4.6.1.b.a.ii(b), See also Comment # 7a. The erroneous citation will be corrected in an Agency Initiated Modification at a future date.
17. Section 4.7.6.b.iv states "Samples obtained from the wells listed in Sections 4.2.6.b (i), (ii) and (iv)....," these sections should be cited as follows: 4.7.6.b (i), (ii) and (iii), See also Comment # 9d. The erroneous citation will be corrected in an Agency Initiated Modification at a future date.

Failure to submit the requested information by May 2, 2005 will automatically rescind this approval.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 428-2545.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

JPB:hcm

cc: H. Monzeglio, NMED HWB  
J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
D. Whaley, NRC  
W. Price, NMOCD

Reading File and NRC 2005 File





## REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

February 14, 2005

Mr. Roger Anderson  
NM Oil Conservation Division  
Environmental Bureau  
1220 S. St. Francis  
Santa Fe, NM 87505-5472

CERTIFIED MAIL/RETURN RECEIPT

7002 2030 0001 8349 2977

2006 FEB 17 PM 1 12

**RE: Navajo Refining's RY 2005 Annual Groundwater Monitoring Report**

Dear Roger,

Enclosed, please find the Electronic 2005 Groundwater Monitoring Report for Navajo Refining in Artesia New Mexico. This report is submitted as per Navajo's Discharge Permit GW-028 dated April 17, 2003.

If there are any questions, please call me at 505-748-3311.

Respectfully,

**NAVAJO REFINING COMPANY**

Jefferson L. Byrd  
Sr. Environmental Specialist

Encl.

## Price, Wayne

---

**From:** Price, Wayne  
**Sent:** Tuesday, October 19, 2004 11:37 AM  
**To:** Darrell Moore (E-mail)  
**Cc:** Gum, Tim  
**Subject:** Pipeline Hydrostatic testing

Dear Darrell:

OCD is in receipt of your Letter Dated September 15, 2004 requesting an alternate method of testing the refinery waste water pipeline from the Artesia refinery to the WDW disposal wells. Your letter points out that the internal liner has failed and would be too costly to replace. Your proposed method of running a hydrostatic test annually is hereby approved with the following conditions:

1. The hydrostatic test pressure shall be 1.5 times the normal operating pressure (unless this pressure may damage the pipe then Navajo shall request an alternate pressure) and held for 4 hours. During the test a recently calibrated pressure chart recorder with a pressure range to closely match the test pressure using 12 hour clock or less. The line shall be isolated from the pressuring device during testing. The test acceptance criteria will be zero bleed off "loss or gain", unless temperature is measured and a compensation engineering calculation demonstrating the gain or loss is supplied.
2. Navajo shall implement an appropriate pipeline corrosion treating and monitoring plan. The length of the pipeline shall be visually observed every three months.
3. Navajo shall install volume totalizers at each end of the pipeline. Records shall be recorded monthly.
3. OCD Santa Fe office and the OCD District office shall be notified at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.
4. Navajo shall report all failures or major problems, discrepancies in flow, pressure loss, etc. to the OCD within 24 hours of Discovery and take immediate corrective actions. A written report shall be submitted within 15 days.
5. A chronologic summary of the pipeline operation, maintenance, pressure testing, pressure, flow and monitoring shall be included in the annual report.

Please be advised that NMOCD approval of this plan does not relieve (Navajo) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Navajo) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

Wayne Price  
New Mexico Oil Conservation Division  
1220 S. Saint Francis Drive  
Santa Fe, NM 87505  
505-476-3487  
fax: 505-476-3462  
E-mail: WPRICE@state.nm.us



# REFINING COMPANY, L.P.

FAX

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

September 15, 2004

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

RECEIVED

SEP 20 2004

Mr. Wayne Price  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 S. St. Francis  
Santa Fe, NM 87505

OIL CONSERVATION  
DIVISION

## RE: Double Walled Pipeline to Injection Wells, Navajo Refining Company

Dear Wayne,

When Navajo acquired our current discharge permit for the injection wells, we voluntarily installed a plastic liner inside the steel pipe that transports our wastewater to our injection wells. As part of that system, we also installed "tattle-tales" at every flange in the liner as a check to make sure the liner wasn't leaking. What this system gives us is a pipeline with secondary containment.

Over the course of the last two years this system has started to show leaks at these "tattle-tales". When a leak is discovered we mobilize a group out of Odessa, Texas to repair the liner at great expense. In every case so far, a poor weld in the plastic liner has been the cause of the leak. We surmise that the liner has been leaking almost from the beginning, but it has taken the fluids this long to reach the "tattle-tales". This is getting to be a burden and we have no assurances that **any** of the welds were done right. What we are concerned with is that this could be a problem until **all of these welds** have been repaired. This would result in considerable cost.

Frankly, after all the treatment and testing this water goes through before it enters the pipeline, we don't feel that this water poses any significant environmental risk that would require secondary containment on the pipeline. Further, secondary containment on this line is not required. Taking into account OCD's duty to protect groundwater, we feel we can address those concerns in other ways that would be more cost effective for us. In lieu of repairing the liner, Navajo proposes an annual hydrostatic testing of the pipeline from our pumps in the plant to the well heads. These tests could be witnessed by OCD field personnel much like the annual mechanical integrity tests on the injection wells.

We believe this approach is environmentally sound. We are asking for approval to do annual hydrostatic testing in lieu of maintaining the plastic inner liner on the wastewater pipeline.

If you have any questions concerning this request, please contact me at 505-746-5281. We look forward to hearing from you.

Sincerely,  
**NAVAJO REFINING COMPANY**

A handwritten signature in black ink, reading "Darrell Moore". The signature is written in a cursive style with a large, stylized "D" and "M".

Darrell Moore  
Environmental Manager for Water and Waste



# REFINING COMPANY, L.P.

File

## FAX

(505) 746-5283 DIV. ORDERS  
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## FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXEC/MKTG  
(505) 746-5421 ENGINEERING  
(505) 746-5480 PIPELINE

December 4, 2003

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

### RE: Schedule for Submitting Workplans

Dear Dave,

Per Navajo Refining Company's (Navajo) Closure-Post Closure Permit, we are required to submit a schedule for providing workplans for 13 SWMU's /AOC's within 60 days following the effective date of the permit (October 5, 2003). The following is that submittal.

We have divided the SWMU/AOC's into three groups, with the workplans to be submitted on June 30, 2004, June 30, 2005, and June 30, 2006 for groups 1, 2, and 3 respectively. Group 1 was chosen to address the area around the Tetra Ethyl Lead (TEL) Impoundment, the North Colony Landfarm (NCL) and the Offsite Plume. The former Diesel storage tanks have been identified as a potential source of the contamination under the TEL. The Diesel Tank farm (Tanks 834 and 838) have been identified as being the source of the contamination under the NCL. Finally, the southeast Tank Farm could be a potential source for the Offsite Plume

We have divided the three main API separators (i.e. North, South and Main) such that one is included in each group to spread these out over the three years evenly. The Main API was put into the last group because it is the newest with the least likelihood of any major problems. Furthermore, Navajo is considering keeping the Main API in service as a settling tank for the discharge stream from the new FCC flue gas scrubber. Accordingly, we plan to propose to NMED a modification of the permit with respect to this unit.

Group 1	Workplan submittal June 30, 2004	North API Separator Diesel Tank Farm (tank 834, 838) Former Diesel storage tanks SE Tank farm area
Group 2	Workplan submittal June 30, 2005	Old API Separator South API Separator SW Tank Farm Crude Tank Farm

Group 3

Workplan submittal June 30, 2006

Clarified Slurry Tanks  
Main API Separator  
South Alky Unit  
North Bundle Pad  
South Bundle Pad

If there are any questions concerning this submittal, please call me at 505-746-5281.

Sincerely,  
NAVAJO REFINING COMPANY

A handwritten signature in black ink that reads "Darrell Moore". The signature is written in a cursive, flowing style.

Darrell Moore  
Environmental Manager for Water and Waste

cc. Phil Youngblood  
Mike Norman, Arcadis



## REFINING COMPANY

FAX

(505) 746-5283 DIV. ORDERS  
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(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXECUTIVE  
(505) 746-5421 ENGINEERING  
(505) 746-5480 P / L

May 31, 2002

Mr. Wayne Price  
New Mexico Oil Conservation Division  
1220 S. St. Francis  
Santa Fe, NM 87505

RECEIVED  
JUN 10 2002  
Environmental Bureau  
Oil Conservation Division

RE: Discharge Plan Inspection GW-028 for Artesia Refinery

Dear Wayne,

As part of our Discharge Plan renewal, the Oil Conservation Division (OCD) conducted an inspection of this facility on October 15-17, 2001. As a result of that inspection, OCD required Navajo to address the following items:

1. **The Warehouse 5 chemical drum storage pad drainage sump was full: Please remove liquids.** This sump was full of rainwater and was emptied on October 18, 2001. This sump is on a regular recall to be emptied weekly by our vacuum truck.
2. **The out of service water draw sumps for tanks 437 and 439 should be closed: Provide for OCD approval a closure plan.** Navajo will clean these basins out but does not want to close them. In the event of an upset to Tk 435, which is where water draws off the crude tanks go to, we would need a place to temporarily take that water. This water would be vacuumed out as soon as possible and put into our process water system. For this reason, these basins still have value to us.
3. **Chemical Tote tanks in the crude oil pump area need proper containment. No action required as Navajo corrected during inspection.**
4. **Crude oil pipeline pump area sump overflowed during inspection. Navajo shall clean up spill and investigate extent of contamination. Results shall be reported on an OCD C-141 form.** This spill was dug up and clean caliche was used to replace contaminated soil that was removed. The contaminated soil was disposed at CRI's landfill between Hobbs and Carlsbad. See photo ENV 1.
5. **Crude "LACT" unloading area and Crude oil pump transfer pump area near Tank 437 oil is being discharged to ground. Please address this issue.** Cement has been poured in both areas to provide containment. See photos ENV 2 and ENV 3.

6. **Gas-Oil Transfer pumps sump bottom needs to be repaired. Please address.** This area has had a new cement containment poured. See photos ENV 7 and 8.
7. **Steam condensate is being discharged to ground. Please address this issue.** Navajo has cleaned up the asphalt in these areas and are making every effort to keep condensate to a minimum although we are not convinced that this is an issue. This is fresh water. See photos ENV 4-6.
8. **Old API Separator has standing fluids. OCD records indicate that Navajo removed the hazardous constituents, cleaned and rendered the concrete as non-hazardous. (see letter to NMED 1997). OCD hereby approves of Navajo's verbal request to remove the concrete basin for proper disposal. Navajo shall investigate under the sump for any WQCC water contaminants and provide OCD a closure report by OCTOBER 15, 2002.** After my discussion with you in your office in early May, Dave Cobrain sent me an e mail approving the sampling plan that we discussed. When those results are received, we will forward them to OCD for final review and any further cleanup.
9. **South plant tank farm tank #419 (diesel) was recently repaired and was noted to have been leaking. Navajo's representatives indicated the most visually contaminated soils were removed. Navajo shall investigate the extent of the contamination and report it's findings to OCD.** This tank has a recovery trench just downgradient from it. Further, the Tool Pushers trench is further downgradient in case something gets by the first trench.
10. **Slurry Oil Treatment Area. Oil is reaching ground surface. Area needs containment. Please address.** Cement containment has been poured along with new steel tanks inside the old cement box to give us secondary containment. See photo ENV 10.
11. **Small leak or drip in one of the Carbon Black Oil (CBO) lines. Please Address.** This leak was repaired the same day as the inspection and the contaminated soil was dug up and disposed at CRI.
12. **API separators shall be cleaned out and inspected annually or have secondary containment with leak detection. Please address this issue.** As we have discussed, Navajo is in the process of replacing or closing the API's in the plant. The Wastewater API will be replaced with two above ground units. Our South Plant API will be closed and a closure plan submitted to OCD and NMED for its removal. This is scheduled to be finished by December 2003 at the latest.
13. **Chemical Tote tanks (AST's) at API North (Navajo calls this the Wastewater Separator) need containment. Please address.** Fiberglass containment has been put in for these totes.
14. **New Gas-Oil Hydro-Treater plant wastewater lines are under construction. Navajo shall submit a detail addendum to the recently submitted discharge plan renewal application to include this project for OCD approval.** When OCD was on-site and looked at the sewer boxes that have secondary containment, those were the **main** hubs to the new Hydrotreater Unit. A drawing of those boxes is included. At this time, the



plans and drawings for the new unit itself are still on the drafting table. When those are finished, copies will be sent to OCD.

15. **OCD recommends that Navajo place labels on all groundwater recovery well tanks.** Has been done.
16. **North Plant Gasoline Pipeline Pump area where sump overflowed.**  
Navajo shall investigate the extent of the contamination and report its findings to OCD. This spill occurred over 18 months ago. As was reported at that time, horizontal delineation in this area would be difficult if not impossible due to the underground electrical system, pipelines and water lines. Again, there are two recovery trenches downgradient from this leak. We have 15 active recovery trenches and three more that were required to be put in by NMED that to this day do not have any product in them. The point being, this refinery has a modern day "Maginot Line" of recovery trenches either operating or inactive. The inactive ones only need pumps installed if product is ever detected.
17. **Waste Streams:** Navajo indicated that all non-hazardous waste in the refinery is currently being disposed of at Controlled Recovery Inc. (CRI) an OCD permitted facility. The exception is office trash, which goes to the local landfill. Two waste streams were noted during the inspection that needs to be included in the discharge plan; (1) Plant Wastewater (slip stream) going to the City of Artesia POTW; and (2) the wastewater treatment by-product called "DAF" solids going to CRI. Navajo shall submit an addendum to the recently submitted discharge plan renewal application detailing all waste streams generated in the refinery. OCD recommends a waste flow diagram to simplify this process. A flow diagram of Navajo's waste streams is included.
18. **Mechanical Integrity of Wastewater Lines and Single Wall Sumps:**  
Navajo shall submit an addendum to the recently submitted discharge plan renewal application to include an up-to-date detail utility drawing with legers showing all old and new underground wastewater lines, sumps, below grade tanks, etc. A cross reference sheet shall be provided to indicate when last test was performed and pass-fail results. Those drawings are included with this submission. The results of our sewer testing have been misplaced and can not be found at this time. The tests of the sewer boxes are included. We replaced over half of all sewer pipes in the last 5 year cycle due to these tests but the results can not be found at this time. We are still searching.
19. **Stormwater Plan:** Navajo shall submit an addendum to the recently submitted discharge plan renewal application to include a stormwater plan for the refinery. Navajo is building a new stormwater dike. A plan drawing of the dikes is included with this submission..
20. **Groundwater Recovery Systems and Hazardous Waste Solid Waste Management Units (SWMU's);** In order to prevent redundant work required from two different agencies, OCD recommends that Navajo, OCD, and New Mexico Environment Department coordinate these

**activities jointly. As discussed during exit interview OCD will set up a meeting to start this process. Navajo would welcome this meeting.**


If there are any questions concerning this submission, please feel free to contact me. We look forward to working with OCD in getting this Discharge Plan Renewal finalized. I can be reached at 505-748-3311.

Sincerely,  
NAVAJO REFINING COMPANY

A handwritten signature in black ink that reads "Darrell Moore". The signature is written in a cursive, flowing style with a large initial "D".

Darrell Moore  
Environmental Mgr. for Water and Waste

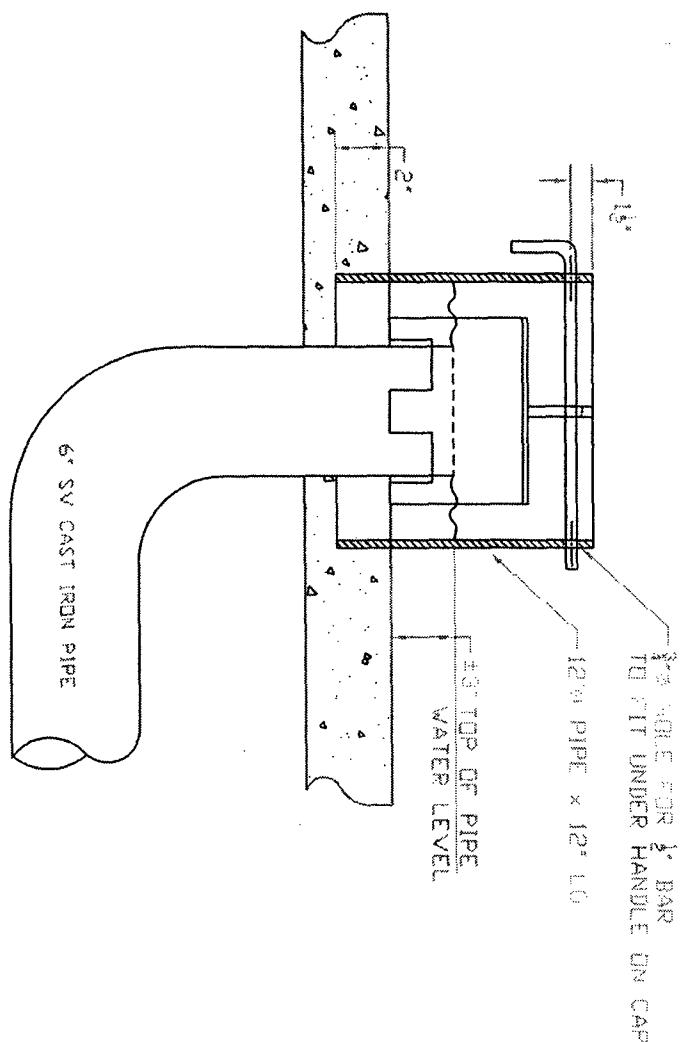


NO.		REVISIONS		CHKD. DATE		APPR. APPR.		DRAWING TITLE		 NAVAJO REFINING CO. ENGINEERING DEPARTMENT P.O. DRAWER 159 ARTESIA, NEW MEXICO			
								SEWER BOX  DETAIL		DRAWN BY BHR		CHK'D BY --	SCALE NONE
										DATE 4/02/01	APPR BY --	DRAWING NUMBER 55-BOX-A	REV. A
A		ISSUED FOR REFERENCE		BHR--		5/02		---					

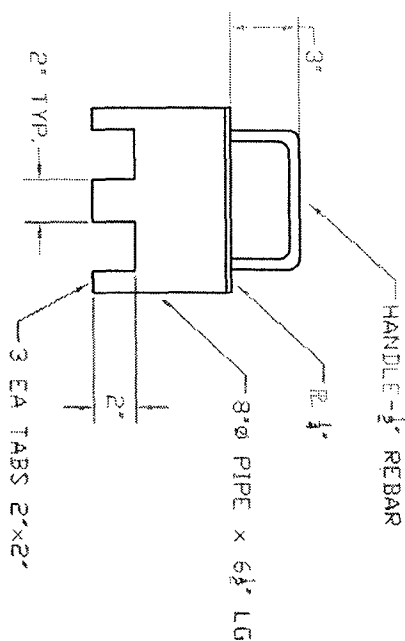
# NOTE

FLOOR DRAINS SHALL BE A MINIMUM  
6" THROAT FLOOR DRAIN W/ 6" P-TRAP

## SECTION VIEW



## CAP DETAIL



**NAVAJO REFINING CO.**  
ENGINEERING DEPARTMENT  
P.O. DRAWER 159  
ARTESIA, NEW MEXICO

DRAWN BY: BHR	DATE: 06/23/00	SCALE NONE
CHECK BY: ---	DATE: ---	JOB NUMBER ---
APPR. BY: ---	DATE: ---	DRAWING NUMBER 55-134-A

## Price, Wayne

---

**From:** Price, Wayne  
**Sent:** Thursday, March 28, 2002 3:17 PM  
**To:** 'darrell@navajo-refining.com'  
**Cc:** Olson, William; 'david\_cobrain@nmenv.state.nm.us'  
**Subject:** Artesia GW-028 and Lea GW-014 Refineries

**Contacts:** Darrell Moore

Dear Darrell:

Please find enclosed draft permits for the two facilities. I am waiting until you submit the addendums on May 31, 2002 before I issue the final permit. I have dated them June 10, 2002.

Please look them over. If you have suggestions that will streamline the process, be more cost effective, etc. we would like to have your input. Also, if you find any discrepancies or problem time lines please let us know. It is important that you complete your addendums by May 31, 2002. Also please review your DP payments and make sure they are up to date, late payments may be a reason to ask for the full amount.

I have listed the following permit conditions item numbers that I think you may want to concentrate on during your review.

Artesia: Items 8,9,13 (please note on 13 if you have waste other than shown please include in addendum),15,19 (please note updated fluoride) and 20.

Please note item 20 is from 5 years ago and probably needs to be updated. This probably will require a meeting with you, myself, Bill Olson and Dave Cobrain.

Lea: Items 8,9,13(same comment as above), 15,18( written in generic form in order to provide greater flexibility).



Artesia  
01DPAPP.DOC



Lov 01 DPAPP.DOC

**Price, Wayne**

---

**From:** Darrell Moore [darrell@navajo-  
**Sent:** Friday, March 15, 2002 3:55 PM  
**To:** Price, Wayne  
**Subject:** March 15.doc

Signed copy to come via snail mail

---

March 15, 2002

Mr. Wayne Price  
New Mexico Oil Conservation Division  
1220 S. St. Francis  
Santa Fe, NM 87505

RE: Discharge Plan Inspection GW-028 for Artesia Refinery

Dear Wayne,

As part of our Discharge Plan renewal, the Oil Conservation Division (OCD) conducted an inspection of this facility on October 15-17, 2001. As a result of that inspection, OCD required Navajo to address the following items:

1. **The Warehouse 5 chemical drum storage pad drainage sump was full: Please remove liquids.** This sump was full of rainwater and was emptied on October 18, 2001. This sump is on a regular recall to be emptied weekly by our vacuum truck.
2. **The out of service water draw sumps for tanks 437 and 439 should be closed: Provide for OCD approval a closure plan.** Navajo will clean these basins out but does not want to close them. In the event of an upset to Tk 435, which is where water draws off the crude tanks go to, we would need a place to temporarily take that water. This water would be vacuumed out as soon as possible and put into our process water system. For this reason, these basins still have value to us.
3. **Chemical Tote tanks in the crude oil pump area need proper containment. No action required as Navajo corrected during inspection.**
4. **Crude oil pipeline pump area sump overflowed during inspection. Navajo shall clean up spill and investigate extent of contamination. Results shall be reported on an OCD C-141 form.** This spill was dug up and clean caliche was used to replace contaminated soil that was removed. The contaminated soil was disposed at CRI's landfill between Hobbs and Carlsbad. See photo ENV 1.
5. **Crude "LACT" unloading area and Crude oil pump transfer pump area near Tank 437 oil is being discharged to ground. Please address this issue.** Cement has been poured in both areas to provide containment. See photos ENV 2 and ENV 3.

3/25/2002

6. **Gas-Oil Transfer pumps sump bottom needs to be repaired. Please address.** This area has had a new cement containment poured. See photos ENV 7 and 8.
7. **Steam condensate is being discharged to ground. Please address this issue.** Navajo has cleaned up the asphalt in these areas and are making every effort to keep condensate to a minimum although we are not convinced that this is an issue. This is fresh water. See photos ENV 4-6.
8. **Old API Separator has standing fluids. OCD records indicate that Navajo removed the hazardous constituents, cleaned and rendered the concrete as non-hazardous. (see letter to NMED 1997). OCD hereby approves of Navajo's verbal request to remove the concrete basin for proper disposal. Navajo shall investigate under the sump for any WQCC water contaminants and provide OCD a closure report by OCTOBER 15, 2002.** This cement basin has been removed and soil samples will be sent for analysis. Once those results are obtained we will submit them to OCD and NMED for approval. Once approval is received, we will fill the hole in. Navajo does not see any reason to drill borings and collect water samples because we know the water is contaminated from previous leaks just upgradient from this area. The leak out of Tk 133 was the driving force behind the installation of the recovery trench on Tool Pushers yard just west of this separator. See photo ENV 9.
9. **South plant tank farm tank #419 (diesel) was recently repaired and was noted to have been leaking. Navajo's representatives indicated the most visually contaminated soils were removed. Navajo shall investigate the extent of the contamination and report it's findings to OCD.** This tank has a recovery trench just downgradient from it. Further, the Tool Pushers trench is further downgradient in case something gets by the first trench.
10. **Slurry Oil Treatment Area. Oil is reaching ground surface. Area needs containment. Please address.** Cement containment has been poured along with new steel tanks inside the old cement box to give us secondary containment. See photo ENV 10.
11. **Small leak or drip in one of the Carbon Black Oil (CBO) lines. Please Address.** This leak was repaired the same day as the inspection and the contaminated soil was dug up and disposed at CRI.
12. **API separators shall be cleaned out and inspected annually or have secondary containment with leak detection. Please address this issue.** As discussed with Wayne Price over the phone, Navajo is currently in the process of building a new Wastewater API and doing away with all other API's. This will involve building a steel box that fits down into the current cement box that will enable us to have secondary containment on this API. Our South Plant API will be closed and a closure plan submitted to OCD and NMED for its removal. This is scheduled to be finished by December 2003 at the latest.
13. **Chemical Tote tanks (AST's) at API North (Navajo calls this the Wastewater Separator) need containment. Please address.** Fiberglass containment has been put in for these totes.
14. **New Gas-Oil Hydro-Treater plant wastewater lines are under construction. Navajo shall submit a detail addendum to the recently submitted discharge plan renewal application to include this project for OCD approval.** These plans will be submitted to OCD by May 31, 2002.
15. **OCD recommends that Navajo place labels on all groundwater recovery well tanks.** This will be done by April 1, 2002.
16. **North Plant Gasoline Pipeline Pump area where sump overflowed. Navajo shall investigate the extent of the contamination and report its findings to OCD.** This spill occurred over 18 months ago. As was reported at that time, horizontal delineation in this area would be difficult if not impossible due to the underground electrical system, pipelines and water lines. Again, there are two recovery trenches downgradient from this leak. We have 15 active recovery trenches and three more that were required to be put in by NMED that to this

day do not have any product in them. The point being, this refinery has a modern day "Maginot Line" of recovery trenches either operating or inactive. The inactive ones only need pumps installed if product is ever detected.

- 17. Waste Streams:** Navajo indicated that all non-hazardous waste in the refinery is currently being disposed of at Controlled Recovery Inc. (CRI) an OCD permitted facility. The exception is office trash, which goes to the local landfill. Two waste streams were noted during the inspection that needs to be included in the discharge plan; (1) Plant Wastewater (slip stream) going to the City of Artesia POTW; and (2) the wastewater treatment by-product called "DAF" solids going to CRI. Navajo shall submit an addendum to the recently submitted discharge plan renewal application detailing all waste streams generated in the refinery. OCD recommends a waste flow diagram to simplify this process. Navajo will submit an addendum for this by May 31, 2002.
- 18. Mechanical Integrity of Wastewater Lines and Single Wall Sumps:** Navajo shall submit an addendum to the recently submitted discharge plan renewal application to include an up-to-date detail utility drawing with legers showing all old and new underground wastewater lines, sumps, below grade tanks, etc. A cross reference sheet shall be provided to indicate when last test was performed and pass-fail results. Navajo will submit this addendum by May 31, 2002.
- 19. Stormwater Plan:** Navajo shall submit an addendum to the recently submitted discharge plan renewal application to include a stormwater plan for the refinery. Navajo is building a new stormwater dike. Navajo is not under the EPA stormwater program because we do not have discharges to waters of the US. The dikes that you saw during the inspection insure this. We are confused why our "discharge" plan would require an addendum when there will be no discharge. If this is still an issue, please let me know. We can add the addendum if needed by May 31, 2002.
- 20. Groundwater Recovery Systems and Hazardous Waste Solid Waste Management Units (SWMU's):** In order to prevent redundant work required from two different agencies, OCD recommends that Navajo, OCD, and New Mexico Environment Department coordinate these activities jointly. As discussed during exit interview OCD will set up a meeting to start this process. Navajo would welcome this meeting.

If there are any questions concerning this submission, please feel free to contact me. We look forward to working with OCD in getting this Discharge Plan Renewal finalized. I can be reached at 505-748-3311.

Sincerely,  
**NAVAJO REFINING COMPANY**

Darrell Moore  
Environmental Mgr. for Water and Waste

3/25/2002





ENV #1



#5



#2



#6



#3



#7



#4



#8

3/15/02

2 of 2



#9



#10



## REFINING COMPANY

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(505) 746-5480 P / L

March 1, 2002

# RECEIVED

MAR 27 2002

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

Mr. Bill Olson  
Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
1220 S. St. Francis  
Santa Fe, NM 87505

### RE: 2001 Annual Ground Water and Treatment System Monitoring Report

Dear Bill,

The referenced report is enclosed. It consists of the following:

- Four groundwater potentiometric maps
- Three product thickness maps (one set is missing due to lost data)
- Graphs depicting elevation and thickness vs. time
- Table showing hits on wells
- The analysis from monitor, residential, and irrigation wells relating to this report

Per your agency's letter of June 14, 1996, the reporting frequency of this report was changed from quarterly to yearly.

For 2001, Navajo recovered approximately 115,900 gallons of product and pumped 11,325,000 gallons of water. These numbers are just best guesses due to the fact that we had air getting into our system (pumps were pumping air) for several months undetected causing our meters to register faulty numbers. All water that is recovered from the trenches is sent to our wastewater system, treated, and then sent to our injection wells for disposal. Product is brought back to the plant and is eventually introduced back into the refinery for reprocessing.

Wells #1 and #2 on Bolton Road were dry for the entire year, therefore, there are no readings for those two. Also, Wells # 7, #9, and #10 were shut down for the year due to the fact that there is no product in these areas.

In the water analysis spreadsheet, which shows hits in the offsite wells, you will notice that we continue to see hits of BTEX and MTBE in monitor wells east of Bolton Road. These include NP-1, NP-2, KWB-7, KWB-8, KWB-11, and KWB-3. The recovery wells

RECOVERY  
WELLS

along Bolton Road were cited with the knowledge that some of the plume had passed this line. Therefore, the presence of BTEX in these wells is no surprise. Also, we show small hits of MTBE (in the 1 to 2 ppb range) in RA-3156 and RA-4798. These are irrigation wells and we have seen these small hits of MTBE in various irrigation wells throughout the course of this project. They never seem to exceed much over 2 ppb.

The area around the Tetra-ethyl Lead Impoundment and the North Colony Landfarm are almost devoid of any free phase product. The recovery trenches have done an excellent job in these areas.

The recovery program has been a success. We are seeing less and less free phase product and are considering installing passive skimmers in some of the monitor wells that still show thin zones of free product. If there are any questions concerning this submission, please call me at 505-748-3311.

Sincerely,  
NAVAJO REFINING COMPANY

A handwritten signature in black ink that reads "Darrell Moore". The signature is written in a cursive, flowing style.

Darrell Moore  
Environmental Manager for Water and Waste

Encl.



## CRUDE OIL MARKETING COMPANY

FAX

(505) 746-5283 DIV. ORDERS  
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02 FEB 22 PM 4:24  
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(505) 746-5480 P / L

February 4, 2002

To Whom It May Concern:

Effective November 15, 2001, Navajo Refining Company converted into a limited partnership. The conversion was made under Section 266 of the Delaware General Corporation Law, and the employee federal tax identification number did not change. Accordingly, please change your records to reflect the new name of the permit holder to Navajo Refining Company, L.P.

E.E. Cox

Manager Crude Acquisition & Trucking

**Price, Wayne**

---

**From:** Price, Wayne  
**Sent:** Tuesday, January 22, 2002 3:14 PM  
**To:** 'Darrell Moore'  
**Subject:** RE: Discharge Plans for Lovington and Artesia  
Extension granted to March 15, 2002.

-----Original Message-----

**From:** Darrell Moore [mailto:darrell@navajo-refining.com]  
**Sent:** Tuesday, January 22, 2002 2:41 PM  
**To:** WPRICE@state.nm.us  
**Subject:** Discharge Plans for Lovington and Artesia

Wayne,

As per our phone conversation of January 22, 2002, Navajo is requesting an extension of the December 15, 2001 deadline for submittal of progress in the action items of your letters of October 22, 2001. We are diligently working towards completing the items and, in fact, have finished a majority of them. The December 15<sup>th</sup> date totally slipped by me. Thanks for your understanding.

Darrell Moore  
Environmental Manager for Water and Waste  
Navajo Refining Co.

1/22/2002



## Price, Wayne

---

**From:** Price, Wayne  
**Sent:** Tuesday, December 11, 2001 9:10 AM  
**To:** 'darrell@navajo-refining.com'  
**Cc:** 'david\_cobrain@nmenv.state.nm.us'; Stubblefield, Mike  
**Subject:** Navajo Artesia Refinery-GW-028 Old API Separator

Dear Mr. Moore:

The New Mexico Oil Conservation (OCD) is in receipt of your request to remove and dispose of the concrete basin from the old API Separator. The OCD hereby approves of your request with the following conditions:

1. Soil samples shall be collected below the basin and sampled for WQCC and RCRA contaminants using EPA approved methods.
2. Notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.
3. Navajo shall submit the soil sample analytical results and a closure plan for OCD approval by March 15, 2002. Copies of this plan shall be submitted to the New Mexico Environment Department-Dave Cobrain.

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

Wayne Price  
OCD-Environmental Bureau

# Affidavit of Publication

NO. 17464

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly

sworn, says: That he is the Publisher of The

Artesia Daily Press, a daily newspaper of general

circulation, published in English at Artesia, said county

and county and state, and that the here to attached

## Legal Notice

was published in a regular and entire issue of the said

Artesia Daily Press, a daily newspaper duly qualified

for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 consecutive weeks/days on the same

day as follows:

First Publication August 28 2001

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_

Gary D. Scott  
Subscribed and sworn to before me this

28th day of August 2001

Barker Ann Beers  
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

# Copy of Publication

88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to two Class I (non-hazardous) deep injection wells located in Sec 31-Ts 17s-R 28 e and Sec 12-Ts 18s-R27e of Eddy County, New Mexico and discharges approximately 150,000 gallons per day of Reverse-Osmosis Reject water used to irrigate two adjacent farms owned and operated by Navajo Refining Company. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth of approximately 10 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet with a total dissolved solids concentration of approximately 6,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed including methods and procedures for handling products, waste, waste water management, and site investigation/abatement plans. Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of

the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest. If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing. GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 21st day of August, 2001.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION  
LORI WORTENBERY,  
Director

SEAL  
Published in the Artesia  
Daily Press, Artesia, N.M.  
August 28, 2001.

Legal 17464

## LEGAL NOTICE

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS AND  
NATURAL RESOURCES  
DEPARTMENT  
OIL CONSERVATION  
DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440: (GW-28)-Navajo Refining Company, Darrell Moore, (505) 746-5281, P.O. Box 1, Artesia, New Mexico,



THE SANTA FE  
**NEW MEXICAN**  
Founded 1849

NEW MEXICO OIL CONSERVATION DIVISION  
ATTN: WAYNE PRICE  
1220 S. ST. FRANCIS DRIVE  
SANTA FE, NM 87505

AD NUMBER: 224378      ACCOUNT: 56689  
LEGAL NO: 69935      P.O.#: 02199000249  
734 LINES      1 time(s) at \$ 323.54  
AFFIDAVITS:      5.25  
TAX:      20.55  
TOTAL:      349.34

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO  
COUNTY OF SANTA FE

I, MM Weideman being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication #69935 a copy of which is hereto attached was published in said newspaper 1 day(s) between 08/30/2001 and 08/30/2001 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 30 day of August, 2001 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/s/ MM Weideman  
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this  
30 day of August A.D., 2001

Notary Laura E. Harding  
Commission Expires 11/23/03

*Approved  
W.P. 7/19/01*

**NOTICE OF PUBLICATION**

**STATE OF NEW MEXICO  
ENERGY, MINERALS  
AND NATURAL  
RESOURCES  
DEPARTMENT  
OIL CONSERVATION  
DIVISION**

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(GW-077) - Burlington Resources, Greg Wurtz, Environmental Representative, P.O. Box 4289, Farmington, New Mexico 87499-4289, has submitted a discharge plan renewal application for their Middle Mesa Natural Gas Compressor Station located in the SW/4 SW/4 of Section 10, Township 31 North, Range 7 West, NMPM, San Juan County, New Mexico. Natural gas products, waste oil and water is stored in above ground tanks prior to being transported off-site to OCD approved facilities. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 150-200 feet with an estimated total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-239) - Burlington Resources, Greg Wurtz, Environmental Representative, P.O. Box 4289, Farmington, New Mexico 87499-4289, has submitted a discharge plan renewal application for their Quinn Natural Gas Compressor Station located in the NW/4 SW/4 of Section 16, Township 31 North, Range 8 West, NMPM, San Juan County, New Mexico. Natural gas products, waste oil, and

water is stored in above ground tanks prior to being transported off-site to OCD approved facilities. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 250 feet with an estimated total dissolved solids concentration of approximately 1700 mg/l. The discharge plan addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-255) - Burlington Resources, Greg Wurtz, Environmental Representative, P.O. Box 4289, Farmington, New Mexico 87499-4289, has submitted a discharge plan renewal application for their Buena Vista Natural Gas Compressor Station located in the NW/4 NE/4 of Section 13, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico. Natural gas products, waste oil and water is stored in above ground tanks prior to being transported off-site to OCD approved facilities. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 30 feet with an estimated total dissolved solids concentration of approximately

1100 mg/l. The discharge plan addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

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(GW-032) - GIANT REFINING Company, Ms. Dinda Mancini, (505) 722-3833 Route 3, Box 7, Gallup, New Mexico, 87301 has submitted a modification application for the previously approved discharge plan for their Ciniza Refinery located in Section 28 and Section 33, Township 15 North, Range 15 West, NMPM, McKinley County, near Gallup, New Mexico. The total discharge of process and non-process wastewater from the facility is about 160,000 gallons/day with an estimated total dissolved solids concentration with a range of about 2,000 mg/l to 3,000 mg/l. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 70 feet to 140 feet with an approximate total dissolved solids concentration of 950 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-28) - Navajo Refining Company, Darrell Moore, (505) 746-5281, P.O. Box 159, Artesia, New Mexico, 88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to two Class I (non-hazardous) deep injection wells located in Sec 31: Ts 17s-R 28 e and Sec 12-Ts 18s-R27e of Eddy County, New Mexico and discharges approximately 150,000 gallons per day of Reverse Osmosis Reject water used to irrigate two adjacent farms owned and operated by Navajo Refining Company. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth

of approximately 100 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet with a total dissolved solids concentration of approximately 6,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed including methods and procedures for handling products, waste, waste water management, and site investigation/abatement plans.

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an above ground bermed closed top tank and two double lined surface evaporation ponds with leak detection prior to transport offsite at an approved OCD disposal facility. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 15 to 55 feet with a total dissolved solids concentration of approximately 4,400 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-019) - Key Energy Services, Inc., Royce Crowell, (505) 393-9171, P.O. Box 2040 Hobbs, New Mexico, 88241 has submitted an application for renewal of its previously approved discharge plan for the Carlsbad Brine Station, located in the SE/4 NE/4 of Section 36, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico. Fresh water is injected to an approximate depth of 710 feet and brine water is extracted with an average total dissolved solids concentration of 300,000 mg/l. Ground water most likely to be affected by any accidental discharge is at a depth exceeding 150 feet and has a total dissolved solids content of approximately 1,800 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 21st day of August 2001.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION  
LORI WROTENBERY, Director  
Legal #69935  
Pub. August 30, 2001



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor

**Jennifer A. Salisbury**

Cabinet Secretary

**Lori Wrotenbery**

Director

**Oil Conservation Division**

Att: Barbara Boans FAX # 505-746-8795

(ARTESIA)

Please publish the attached notices one time only upon receipt of this request. Upon notification, please send the following to this office:

1. Publisher's affidavit
2. Invoice. Our purchase order number is: 02199000252

Please publish not later than August 31, 2001.

If you have any questions, please e-mail me or phone (505)-476-3487.

Thank you.

Wayne Price- Oil Conservation Div.



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**  
Governor  
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## NOTICE OF PUBLICATION

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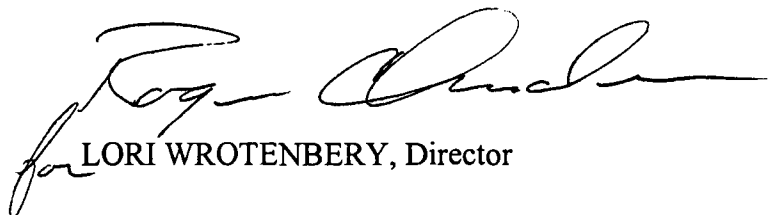
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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 21<sup>st</sup> day of August 2001.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
for LORI WROTENBERY, Director

S E A L



## REFINING COMPANY

FAX

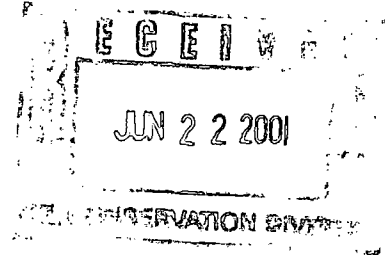
(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXECUTIVE  
(505) 746-5421 ENGINEERING  
(505) 746-5480 P / L

June 20, 2001



Mr. Wayne Price  
Environmental Bureau  
Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505-5472

**RE: Navajo Refining Company's Discharge Permit (GW-28) for the Artesia Facility**

Dear Wayne,

Enclosed, please find a check for \$100 to cover the filing fee for the renewal of Navajo's discharge plan GW-28. This plan covers the Artesia facility. This discharge plan is set to expire on October 21, 2001. Navajo will use these 120 days until the expiration date to update the plan where necessary and submit it to the Oil Conservation Division.

If there are any questions concerning this submission, please call me at 505-746-5281. Thank you for your time in this matter.

NAVAJO REFINING COMPANY

Darrell Moore  
Environmental Mgr. for Water and Waste



ACKNOWLEDGEMENT OF RECEIPT  
OF CHECK/CASH

I hereby acknowledge receipt of check No. [REDACTED] dated 6-18-01  
or cash received on \_\_\_\_\_ in the amount of \$ 100<sup>00</sup>

from NAVAJO REFINING CO.

for ARTESIA REFINERY GW-28.

Submitted by: \_\_\_\_\_ Data: \_\_\_\_\_

Submitted to ASD by: WAYNE PRICE Data: 7/3/01

Received in ASD by: [Signature] Data: \_\_\_\_\_

Filing Fee ☒ New Facility \_\_\_\_\_ Renewal \_\_\_\_\_

Modification \_\_\_\_\_ Other \_\_\_\_\_

Organization Code 521.07 Applicable FY 2002

To be deposited in the Water Quality Management Fund.

Full Payment \_\_\_\_\_ or Annual Increment \_\_\_\_\_

THIS CHECK CLEARS THROUGH POSITIVE PAY  
**NAVAJO REFINING COMPANY**  
501 EAST MAIN STREET  
P O BOX 159  
ARTESIA, NM 88211-0159  
(505) 748-3311



Bank of America Customer Connection  
Bank of America, N.A.  
Atlanta, Dekalb County, Georgia

64-1278  
611

CHECK  
DATE: 06-18-01

PAY EXACTLY

\$100.00

VOID AFTER 180 DAYS

Craig Dallas

PAY  
TO THE  
ORDER  
OF

New Mexico Energy, Minerals and  
Natural Resources  
Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505-5472

\$25,000.00 OR MORE REQUIRES 2 MANUAL SIGNATURES



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor

**Jennifer A. Salisbury**

Cabinet Secretary

**Lori Wrotenbery**

Director

**Oil Conservation Division**

## Memorandum of Meeting or Conversation

Telephone   X    
Personal         
E-Mail   X    
FAX:       

Date:

Originating Party: Wayne Price-OCD

Other Parties: Darrell Moore- Navajo Refining

Subject: Discharge Plan Renewal Notice for the following Facilities:

GW-028	Navajo Artesia Refinery	expires 10/21/01
GW-014	Navajo Lovington Refinery	expires 10/30/01
GW-___	Name	expires
GW-___	Name	expires

**WQCC 3106.F.** If the holder of an approved discharge plan submits an application for discharge plan renewal at least 120 days before the discharge plan expires, and the discharger is not in violation of the approved discharge plan on the date of its expiration, then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge plan continued under this provision remains fully effective and enforceable. An application for discharge plan renewal must include and adequately address all of the information necessary for evaluation of a new discharge plan. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [12-1-95]

**Discussion:** Discussed WQCC 3106F and gave notice to submit Discharge Plan renewal application with \$100.00 filing fee for the above listed facilities.

**Conclusions or Agreements:**

Please send DP application and filing Fee (\$100 each) before 6/21/01 to retain WQCC 3106.F provision.

Signed: \_\_\_\_\_

**Price, Wayne**

---

**From:** Mail Delivery Subsystem[SMTP:MAILER-DAEMON@navajo-refining.com]  
**Sent:** Monday, March 19, 2001 10:29 AM  
**To:** Price, Wayne  
**Subject:** Return receipt

ATT36802.TXT

ATT36803.TXT

The original message was received at Mon, 19 Mar 2001 10:29:06 -0700 (MST)  
from nrc6.navajo-refining.com [150.150.150.219]

----- The following addresses have delivery notifications -----

<darrell@navajo-refining.com> (successfully delivered to mailbox)

--- The transcript of the session follows ---

<darrell@navajo-refining.com>... Successfully delivered



## REFINING COMPANY

**FAX**

(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

**FAX**

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXECUTIVE  
(505) 746-5421 ENGINEERING  
(505) 746-5480 P / L

2/22/01

Ken Marsh  
CRI  
P.O. Box 388  
Hobbs, NM 88241

I would like to get the following waste profiled into your facility. This waste is trash that is generated around the refinery that we take to Sandpoint landfill in Carlsbad.

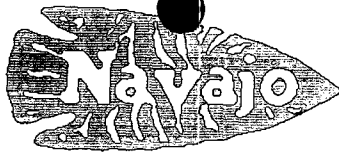
- (1) Cardboard Boxes
- (2) Pallets
- (3) Paper
- (4) Insulation
- (5) Plastic
- (6) Rags

The above waste is Non Hazardous material that would be transported in 20 yard roll off bins by Champion Inc. Included you will find a Certification of Waste Status.

Sincerely,

Charlie Pymale  
Environmental Specialist

Post-It® Fax Note	7671	Date	2/2/01	# of pages	2
To	CRI	From	Charlie Pymale		
Co./Dept.		Co.			
Phone #		Phone #	505 748 3311		
Fax #	505 393 3615	Fax #	505 746 5421		



## REFINING COMPANY

FAX

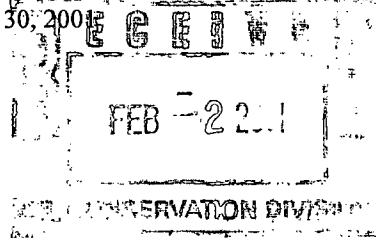
(505) 746-5283 DIV. ORDERS  
(505) 746-5481 TRUCKING  
(505) 746-5458 PERSONNEL

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159  
TELEPHONE (505) 748-3311

FAX

(505) 746-5419 ACCOUNTING  
(505) 746-5451 EXECUTIVE  
(505) 746-5421 ENGINEERING  
(505) 746-5480 P / L

January 30, 2001



Mr. Wayne Price  
New Mexico Oil Conservation Division  
1220 S. St. Francis  
Santa Fe, NM 87505

**RE: November 11, 2000 Gasoline Spill at Navajo Refining Co.'s Pipeline Manifold**

Dear Wayne,

As was reported to the OCD on November 11, 2000, Navajo experienced a gasoline spill at our pipeline manifold at our refinery in Artesia, NM. This spill released 25 barrels of gasoline when power was lost to the main pumps at the manifold. A 125 hp booster pump continued to run and eventually built up enough pressure to open a relief valve that dumped gasoline into a sump. When this sump filled up, it overflowed into the manifold area. This booster pump has now been reconfigured to shut off if power is lost.

Of the 25 barrels lost, our vacuum truck picked up 4 barrels. The rest of the fluid soaked into the ground around the manifold. This area that was affected is about 30' by 30' and is a maze of underground conduit and above ground pipelinet. The conduit holds electric lines for the manifold. To try to dig up this spill would be extremely difficult and dangerous.

Navajo has a system of recovery wells around this plant. We also have the good fortune of having extremely beneficial geology under the plant. The first water zone is at approximately 15 foot in the area of this spill and is the zone that all leaks from the refinery are floating on. Under this water zone are several clay layers that also keep these spills from reaching any drinking water. We would like to propose that we be allowed to let the recovery system in the refinery recover this product.

If there are any questions concerning this matter, please call me at 505-746-5281. Thank you for your time in this matter.

Sincerely,  
NAVAJO REFINING COMPANY

Darrell Moore  
Environmental Mgr for Water and Waste

cc: Dave Cobrain, NMED

**Price, Wayne**

---

**From:** Price, Wayne  
**Sent:** Tuesday, January 16, 2001 11:10 AM  
**To:** 'Darrell Moore'  
**Subject:** RE: TK 111

Approved with the following condition:

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

-----  
**From:** Darrell Moore[SMTP:darrell@navajo-refining.com]  
**Reply To:** Darrell Moore  
**Sent:** Tuesday, January 16, 2001 9:54 AM  
**To:** WPRICE@state.nm.us  
**Subject:** TK 111

Wayne,

We are requesting to be allowed to discharge 4000 bbls of fresh hydrotest water to our farm. The analysis this water shows HITS on Iron (Fe 1.37) and Boron (B .07). WQCC for Iron is 1 and for Boron is .75 so is the only constituent over the WQCC standard. We also analyzed for volatiles, semi-volatiles, pah's, and general chemistry. TSS is 9.5, COD .002, Fluoride 1.48, NO3 .64, pH 7.42, Cond. 1216. Volatiles, semivolatiles and PAH's were all no detect.

We will mail a hard copy of the analysis and request letter

**Price, Wayne**

---

**From:** Darrell Moore[SMTP:darrell@navajo-refining.com]  
**Reply To:** Darrell Moore  
**Sent:** Tuesday, January 16, 2001 9:54 AM  
**To:** WPRICE@state.nm.us  
**Subject:** TK 111

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We will mail a hard copy of the analysis and request letter.

Darrell Moore  
Environmental Mgr for Water and Waste  
Navajo Refining Co.



GARY E. JOHNSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Hazardous Waste Bureau  
2044 A Galisteo Street  
Santa Fe, New Mexico 87505  
Telephone (505) 827-1557  
Fax (505) 827-1544*



PETER MAGGIORE  
SECRETARY

PAUL R. RITZMA  
DEPUTY SECRETARY

**CERTIFIED MAIL  
RETURN RECEIPT REQUIRED**

July 19, 2000

Mr. Darrel Moore  
Navajo Refining Company  
501 East Main Street  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: LISTING DETERMINATION FOR DISSOLVED  
AIR FLOATATION (DAF) FLOAT  
FACILITY WASTEWATER TREATMENT SYSTEM  
NAVAJO REFINERY FACILITY, ARTESIA, NEW MEXICO**

Dear Mr. Moore:

This letter is in response to a request by Navajo Refining Company, dated May 17, 2000, for concurrence that the dissolved air flotation (DAF) float generated in Navajo's DAF unit is not considered as listed waste under 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart D). The DAF unit is located downstream of the aggressive biological treatment (ABT) unit of the wastewater treatment system currently in operation at the Artesia Refinery. The New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) has concluded that, based on information supplied in the letter request and subsequent correspondence, the DAF float is not considered to be KO48 waste as defined in 40 CFR §261.32 (incorporated at 20.1.200 NMAC).

Navajo Refining Company must continue to meet the definition of ABT in the wastewater treatment system as defined in 40 CFR §261.31(b) and comply with the terms and conditions of the underground injection well discharge plan approved by the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division in order to maintain the unlisted status of the DAF float. In addition, the DAF float must be sampled in August 2000 and quarterly



Mr. Darrel Moore  
Navajo Refining Company  
July 19, 2000  
Page 2 of 2

thereafter for two consecutive quarters followed by semi-annual sampling. The DAF float also must be sampled within 15 days of any significant change to the refining process. The DAF float samples must be submitted to an analytical laboratory for chemical analysis for characteristic hazardous waste as specified in 20.4.1.200 NMAC (incorporating 40CFR §§261.20 through 261.24). Navajo Refining Company must submit copies of the final laboratory reports to the HWB within 7 days of receipt from the analytical laboratory. The DAF float must be handled as hazardous waste if chemical analysis indicates any characteristic of hazardous waste as defined in 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart D).

Please call this office at (505) 827-1561 if you have questions regarding the anticipated schedule for issuance of the post-closure care permit for the subject site listed above.

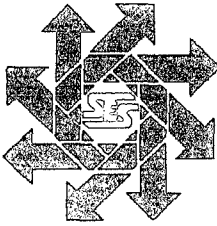
Sincerely,



David Cobrain  
Project Manager  
Hazardous Waste Bureau

cc: James P. Bearzi, NMED HWB  
John E. Kieling, NMED HWB  
Wayne Price, NMOCD  
Charles deSaillan, NMED OGC  
Connie Pasteris, NMED HWB  
Pam Allen, NMED HWB

file: Red/NRC/00  
Track: NRC/Moore/Cobrain/07-19-00/DAF float listing determination



P.O. Box 1613  
703 E. Clinton Suite 103  
Hobbs, New Mexico 88240  
505/397-0510  
fax 505/393-4388  
www.sesi-nm.com

## **Safety & Environmental Solutions, Inc.**

May 19, 2000

Mr. William C. Olson, Hydrologist  
Environmental Bureau  
New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

RE: Groundwater Monitor Well Repositioning, Navajo Artesia Refinery

Dear Mr. Olson: *Bill*

This letter will confirm our telephone conversation of Thursday, May 18 regarding the number of monitor wells to be installed to replace KWB-2A and KWB-2B located on the Armstrong Farm. At the initiation of the Navajo off-site investigation project in 1992 very little information was known about the near-surface saturated zone and two monitor wells were installed at that location to allow an aquifer test to be conducted. Because aquifer testing is not planned for the new location, there is not a need for a second well to be completed in the same zone. You concurred with this reasoning and this letter documents the change in the work plan, which was approved by OCD on May 3, 2000.

If you have any questions, please contact me at (505) 397-0510 or at (505) 281-8591.

Sincerely yours,

David G. Boyer, P.G.

Cc. Darrell Moore, Navajo Refining Company

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

May 3, 2000

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. 5051-3037**

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: GROUND WATER MONITOR WELL REPOSITIONING  
NAVAJO ARTESIA REFINERY**

Dear Mr. Moore:

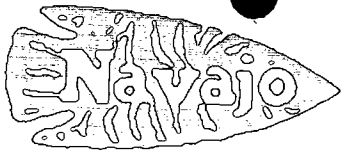
The New Mexico Oil Conservation Division (OCD) has reviewed Navajo Refining Company's (Navajo) January 13, 2000 "REPOSITIONING OF KWB-2 AND KWB-2A FROM ARMSTRONG FARM TO US 82 RIGHT OF WAY, OFFSITE PLUME, NAVAJO REFINING COMPANY, EDDY COUNTY, NEW MEXICO". This document contains Navajo's work plan for relocating monitor wells KWB-2 and KWB-2A due to the landowners concern that they restrict his access for farming the land.

The proposed work plan as contained in the above referenced documents is approved with the following conditions:

1. Navajo shall construct both the new monitor wells in the same manner as monitor wells KWB-2 and KWB-2A.
2. The wells shall be developed after construction using EPA approved procedures.
3. No less than 24 hours after the wells are developed, ground water from the monitor wells shall be purged, sampled and analyzed for concentrations of aromatic and halogenated volatile organics, polycyclic aromatic hydrocarbons (PAH), New Mexico Water Quality Control Commission metals and major cations and anions using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
4. All wastes generated shall be disposed of at an OCD approved facility.

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278

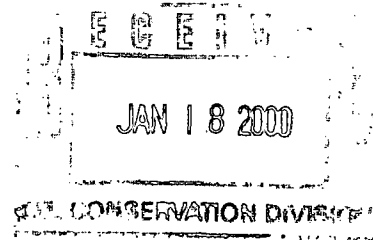


## REFINING COMPANY

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

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

January 13, 2000



Mr. Bill Olson  
Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

**RE: Re-positioning of KWB-2 and KWB-2A from Armstrong Farm to US 82 Right of Way, Offsite Plume, Navajo Refining Company, Eddy County, New Mexico**

Dear Bill,

As we discussed on the phone, the two monitor wells on the Armstrong Farm (KWB-2 and KWB-2A) have become a nuisance for the farmer and he has asked that we remove them. Since these monitor wells are in a fairly critical area we would like to propose that Navajo replace them with two additional wells along the right of way of US 82. This would entail moving them approximately 400 ft. due north from their present location. This would still allow us to detect early any migration of the plume beneath this area. To date, we have had no hits in these two wells.

If we hit contamination at the proposed site along US 82, which we don't think will happen, the only other location available to us from the farmer is marked on the map as "Secondary Location". This location is about 400 feet **south** of the current location of the two wells.

I have included a map showing the present and future locations of the two wells. To remove them from their current location, we would simply winch them out of the ground and plug the hole with bentonite. Mr. Armstrong would like this to be done as soon as possible.

Thank you for your time in this matter. If you have any questions, please call me at 505-748-3311.

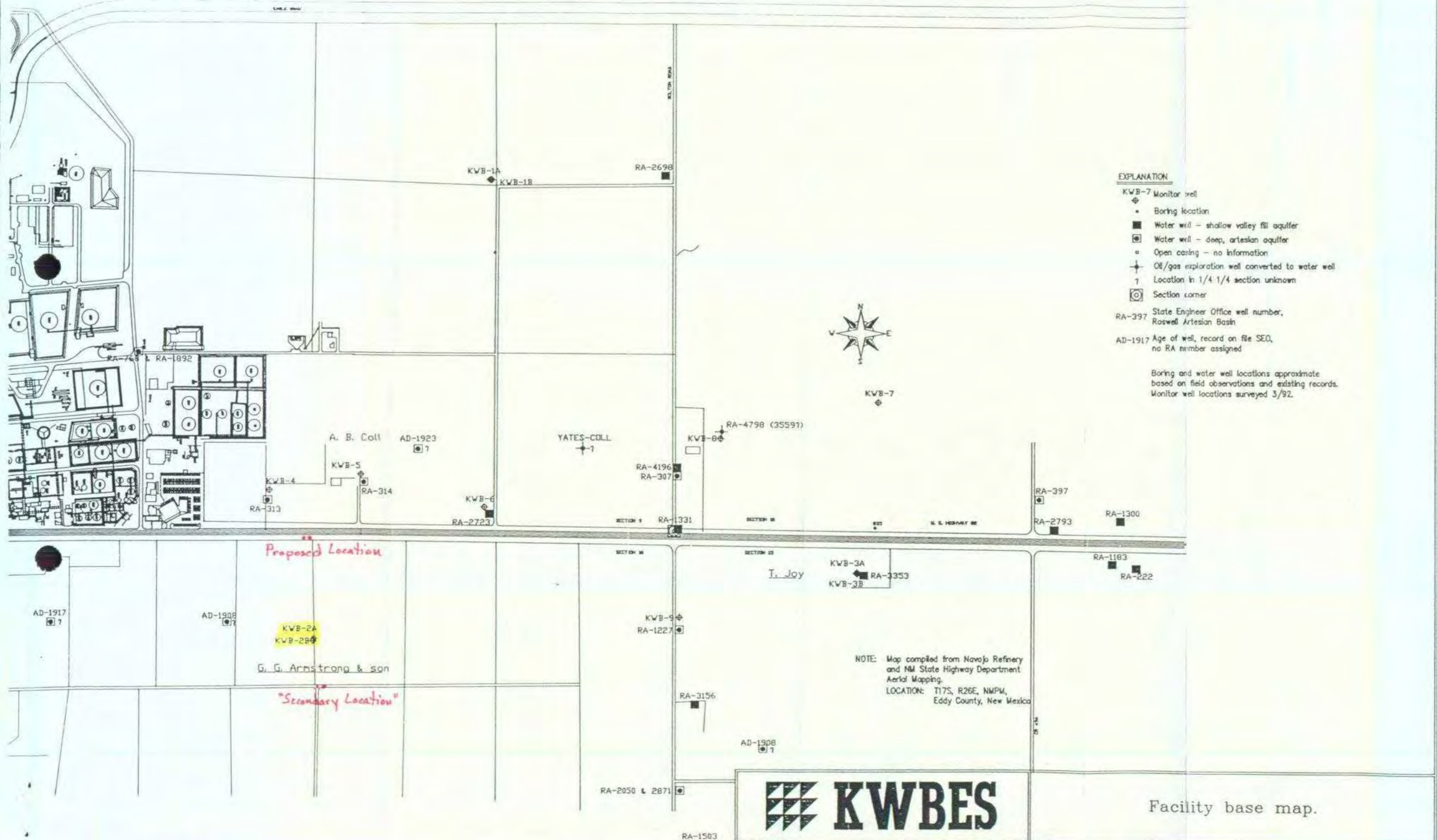
Sincerely,  
NAVAJO REFINING COMPANY

*Darrell Moore*

Darrell Moore  
Environmental Mgr. for Water and Waste

Encl.





EXPLANATION

- KWB-7 Monitor well
- Boring location
- Water well - shallow valley fill aquifer
- ⊙ Water well - deep, artesian aquifer
- Open casing - no information
- ⊕ Oil/gas exploration well converted to water well
- 7 Location in 1/4 1/4 section unknown
- ⊙ Section corner
- RA-397 State Engineer Office well number, Roswell Artesian Basin
- AD-1917 Age of well, record on file SEO, no RA number assigned

Boring and water well locations approximate based on field observations and existing records. Monitor well locations surveyed 3/92.

NOTE: Map compiled from Navajo Refinery and NM State Highway Department Aerial Mapping.  
LOCATION: T17S, R26E, NMPM, Eddy County, New Mexico

**KWBES**

Facility base map.

**FACSIMILE  
TRANSMISSION****415 W. Wall St., Ste. 1818  
Midland, Texas 79701**DATE: 08/02/1999TO: Bill Olson  
COMPANY: NMOCDFAX: (505) 827-8177  
Phone: (505) 827-7154FROM: Gil Van Deventer  
COMPANY: TRW Inc. (Energy & Environmental Systems)FAX: (915) 682-0028  
Phone: (915) 682-0008Number of Pages (including cover page): 1**Re: Notification of Scheduled Sampling & Monitoring Activities**

TRW has scheduled the dates for Groundwater Sampling Events at the facilities listed below.

<u>Site</u>	<u>Estimated Sampling Date</u>
Navajo - Lea Refinery near Lovington, NM	Aug. 16, 1999
GPM - Lee Plant near Buckeye, NM	Aug. 17-18, 1999
GPM - Linam Ranch Plant near Hobbs, NM	Aug. 19, 1999
GPM - Monument Booster near Monument, NM	Aug. 20, 1999

Generally, work will consist of gauging and sampling monitoring wells on site. Also, operation & maintenance of remediation systems will be performed.

Please call me at 915-682-0008 if you have any questions.

**CONFIDENTIALITY NOTICE**

The documents accompanying this facsimile transmission contain confidential information belonging to the sender which is legally privileged. The information is intended only for the use of the individual or entity named above. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this facsimile is strictly prohibited. If you have received this facsimile in error, please immediately notify us by telephone to arrange for the return of the original documents to us.



GARY E. JOHNSON  
GOVERNOR

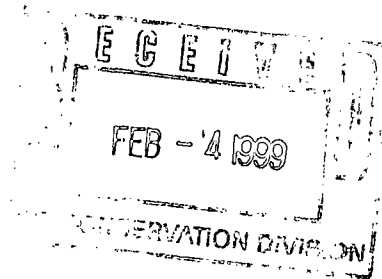
State of New Mexico  
ENVIRONMENT DEPARTMENT  
Hazardous & Radioactive Materials Bureau  
2044 Galisteo Street  
P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-1557  
Fax (505) 827-1544



PETER MAGGIORE  
SECRETARY

January 28, 1999

ATTN: Roger Anderson  
Environmental Bureau Chief  
New Mexico Oil Conservation Division  
Environmental Bureau  
2040 South Pacheco  
Santa Fe, New Mexico 87505-5472  
(505) 827-7152



Re: Navajo Refining Company, Hazardous Minimization Program

Dear Mr. Anderson,

The New Mexico Environment Department (NMED) - Hazardous and Radioactive Materials Bureau (HRMB) is in receipt of a letter and video tape from Navajo Refining Company (NRC) regarding the "sewer inserts" to be installed in the sewer boxes or sumps to minimize the amount of F037 waste accumulation.

The HRMB has responded to their proposal. A copy of the response is attached for your information and file. If you have any questions, please do not hesitate to call me at (505) 827-1508 or Mr. Billy Barnes at 827-1835.

Sincerely,

John Tymkowych  
RCRA Inspection/Enforcement Program Manager, HRMB

cc: File





GARY E. JOHNSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**  
*Hazardous & Radioactive Materials Bureau*  
*2044 Galisteo Street*  
*P.O. Box 26110*  
*Santa Fe, New Mexico 87502*  
*(505) 827-1557*  
*Fax (505) 827-1544*



PETER MAGGIORE  
SECRETARY

January 28, 1999

ATTN: Darrel Moore  
Environmental Manager for Water and Waste  
Navajo Refining Company  
501 East Main Street  
P. O. Box 159  
Artesia, New Mexico 88211-0159  
(505) 748-3311

Re: Waste Minimization Program, Sewer Inserts

Dear Mr. Moore:

The New Mexico Environment Department (NMED) - Hazardous and Radioactive Materials Bureau (HRMB) has reviewed the letter and video from Navajo Refining Company (NRC) regarding the "sewer inserts" to be installed in the sewer boxes or sumps to minimize the amount of F037 accumulation.

The HRMB understands that the process wastewater piping runs do not enter the sewer inserts. Based on the information received, HRMB also understands that there are two sources of water reaching the sewer inserts: 1) storm water runoff and 2) process equipment blowdown. The sewer inserts will catch solids and debris that would normally be washed into the sewers by these two water sources, thereby minimizing the amount of F037 waste accumulation.

The HRMB further understands from your letter that NRC will sample the "mud" or sediment accumulated in the sewer inserts per the TCLP to determine if it is characteristically hazardous. Per your telephone conversation with Mr. Billy Barnes, NRC will do a composite sample of the sediment from all sewer inserts once per month for at least six months and have the sample analyzed for a full TCLP. If the samples are clean or non-hazardous, then sampling would only be performed annually thereafter.

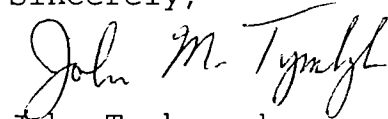
The HRMB accepts your proposal for waste minimization provided that a representative sample of the sediment accumulated in the sewer inserts is collected using a sampling procedure that

will ensure a good representation of the sediment and minimum loss of volatiles. If a history of analysis reports shows evidence that the sediment is non-hazardous, then the HRMB will concur that the sediment accumulated in the sewer inserts may be handled and disposed of as non-hazardous waste using only one analysis per year, providing that the process for accumulation of sediment does not change.

Please let us know the progress and status of your hazardous waste minimization program regarding F037 when you have a history of analysis reports on file. If you have any questions, please do not hesitate to call me at (505) 827-1508 or Mr. Billy Barnes at 827-1835. A copy of this letter will be forwarded to Mr. Roger Anderson of the Oil Conservation Division as you requested.

The NMED/HRMB commends your efforts and encourages NRC to continue to pursue and promote hazardous waste minimization.

Sincerely,



John Tymkovich  
RCRA Inspection/Enforcement Program Manager, HRMB

cc: Roger Anderson, Bureau Chief, Oil Conservation Division  
File



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
DISTRICT I Hobbs  
PO BOX 1980  
Hobbs, NM 88241-1981  
(505) 393-6161

Jennifer A. Salisbury  
CABINET SECRETARY

May 8, 1998

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159

Mr. Ken Marsh  
P.O. Box 369  
Hobbs, NM 88241

Re: C-138 Request dated 4/30/98; Sewer Inserts.

Dear Mr. Moore and Mr. Marsh:

New Mexico Oil Conservation Division (NMOCD) is in receipt of your request to dispose of waste solids generated in the sewer inserts which is an integral part i.e. constructed inside, of your Artesia's Refinery wastewater collection systems. After several hours of research I cannot find any clear-cut Regulatory Interpretation Memo "RIM" concerning this specific issue. **Therefore the NMOCD cannot approve of this waste stream at this time.**

After checking with Mr. John Tymkowych, Program Manager of the New Mexico Hazardous & Radioactive Material Bureau (NMHRMB) it appears the approval of this waste being classified other than a F037 RCRA "listed waste" will have to be presented by the generator to the NMHRMB for their approval. Please call Mr. Tymkowych at 505-827-1508.

Once the NMHRMB approves please provide NMOCD written correspondence from NMHRMB, then we can process your C-138 in the normal manner with the usual acceptable documentation.

The NMOCD has reviewed your request and feels this waste stream if generated in a manner that isolates it from the normal F037 wastewater stream and does not contain chemical constituents that originally caused the wastewater to be classified as F037, then it should not be classified as F037, but will still be required to pass the hazardous characteristics test. This scenario was presented to the EPA RCRA Hot Line on May 7, 1998 with the same conclusion as above, however was disclaimed as not being an official or legal opinion.

The NMOCD also agrees this will assist in reducing your hazardous waste as required under RCRA's waste minimization program, enhance your NMOCD discharge plan requirements by reducing the overall environmental impact of your operations, and of course be more cost effective for Industry.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

Wayne Price-Environmental Engineer

cc: Chris Williams-NMOCD District I Supervisor  
Tim Gumm-NMOCD District II Supervisor  
Roger Anderson-Environmental Bureau Chief, Santa Fe, NM  
Martyne Kieling-Environmental Bureau, Santa Fe, NM  
John Tymkowych-NMHRMB Santa Fe, NM

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278

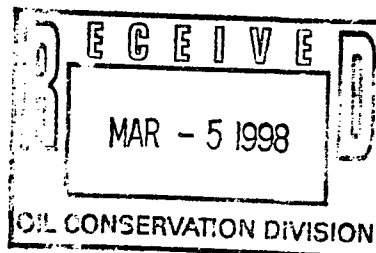


## REFINING COMPANY

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

SWD 3/20/98  
FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P/L

February 27, 1998



New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

Certified Mail Receipt

Z 443 810 048

RE: Class II Well Permit Application for Navajo Refining Company's WDW-1

Gentlemen:

Navajo Refining Company (Navajo) submits this permit application for a Class II well for approval to re-enter a plugged and abandoned well to conduct injection testing. Navajo proposes to re-enter the Mewbourne Oil Company Chalk Bluff 31 No. 1 well, which is located in Section 31, T17S, R28E, Unit Letter O, approximately 11 miles east-southeast of Artesia, in Eddy County, New Mexico. The Mewbourne Oil Company Chalk Bluff 31 No. 1 well was drilled through the Morrow Formation to 10,200 feet in 1993 and was plugged and abandoned. The zones to be tested for injection are porous intervals in the Wolfcamp, Cisco, and Canyon Formations between 6890 feet and 9016 feet below kelly bushing in the Mewbourne Oil Company Chalk Bluff 31 No. 1 well.

Please do not hesitate to contact me at (505) 748-3311 if you have any questions.

Sincerely,

Darrell Moore  
Environmental Manager of Water and Waste

cc: NM OCD - District II Z 443 810 049  
Baber Well Servicing Z 443 810 052  
Mewbourne Oil Co. Z 443 810 051  
Pronghorn Mngmt Corp Z 443 810 053  
Mack Energy Corp Z 443 810 054  
Kersey & Company Z 351 689 394  
ARCO Permian Z 443 810 050



# REFINING COMPANY

Artesia, New Mexico

## FAX COVER LETTER

Date: October 21, 1997

From: Phil Youngblood

Attention: **Mr. Roger Anderson**

Department: Environmental Bureau

Company: NM OCD

Number of Pages: 4 (Includes Cover Page)

FAX Number: (505) 827-8177

Navajo FAX Number: (505) 748-9077

Please call (505) 748-3311, ext 241 if there are any problems with this transmission

### MESSAGE:

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

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

FAX  
(505) 746-8410 ACCTG  
(505) 746-8155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

October 21, 1997

Mr. Richard Mayer, Environmental Engineer  
RCRA Permits, 6H-P  
New Mexico Federal Facilities  
U.S. EPA, Region VI  
1445 Ross Ave.  
Dallas, TX 75202

Via Fax

Dr. R. Stuart Dinwiddie, Director  
RCRA Permits Management Program  
Hazardous & Radioactive Materials Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, NM 87502

Mr. Roger Anderson  
Environmental Bureau - Chief  
New Mexico Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505

Subject:       Reactivation of Evaporation Pond No. 2

Dear Messrs. Mayer and Anderson, and Dr. Dinwiddie:

This letter provides formal notification that, due to the insufficient volume and surface area of the currently active evaporation ponds (Ponds 3-6), Navajo will reactivate a substantial portion of Pond 2 in the immediate future. Because the 1994 deactivation of Pond 2 was voluntary on Navajo's part, we do not believe that any agency approval is required, and none is being requested. Rather, we are notifying you as a courtesy. We provided oral notification at a recent meeting with the New Mexico OCD which Ms. Susan Hoines of the NMED also attended.

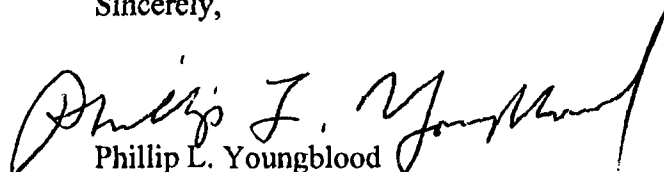
Reactivation of Pond 2 is necessary for a number of reasons. First, Navajo never envisioned that resolution of the ponds issues with the various government agencies, and, therefore, reliance on Ponds 3-6, would last as long as it has. The limited area and volume afforded by Ponds 3-6 are not sufficient to keep up with the refinery's wastewater volumes indefinitely. Also, Artesia has had an exceptionally rainy period in September and October and generally less-than-normal evaporation rates all summer. So, we are entering the winter with a much higher than normal water level in Ponds 3-6. Winter is

Mr. Richard Mayer, U.S. EPA  
Dr. R. Stuart Dinwiddie, NMED  
Mr. Roger Anderson, NMOCD  
Page 2

the season of minimal evaporation rates. The situation is further aggravated by the fact that wastewater discharge volumes are higher in the winter due to the use of running water for freeze prevention. Finally, we are concerned about forecasts of a wetter-than-normal winter season due to El Nino.

As is depicted in the attached figure, the reactivation of Pond 2 will be accomplished by pumping pond water over the dike that currently separates Ponds 2 and 3 until the levels are equal, and then cutting out a section of the dike. As can be seen, the point where the pond water will enter Pond 2 is far from the point of wastewater discharge, which is located at the west end of Pond 5.

Sincerely,

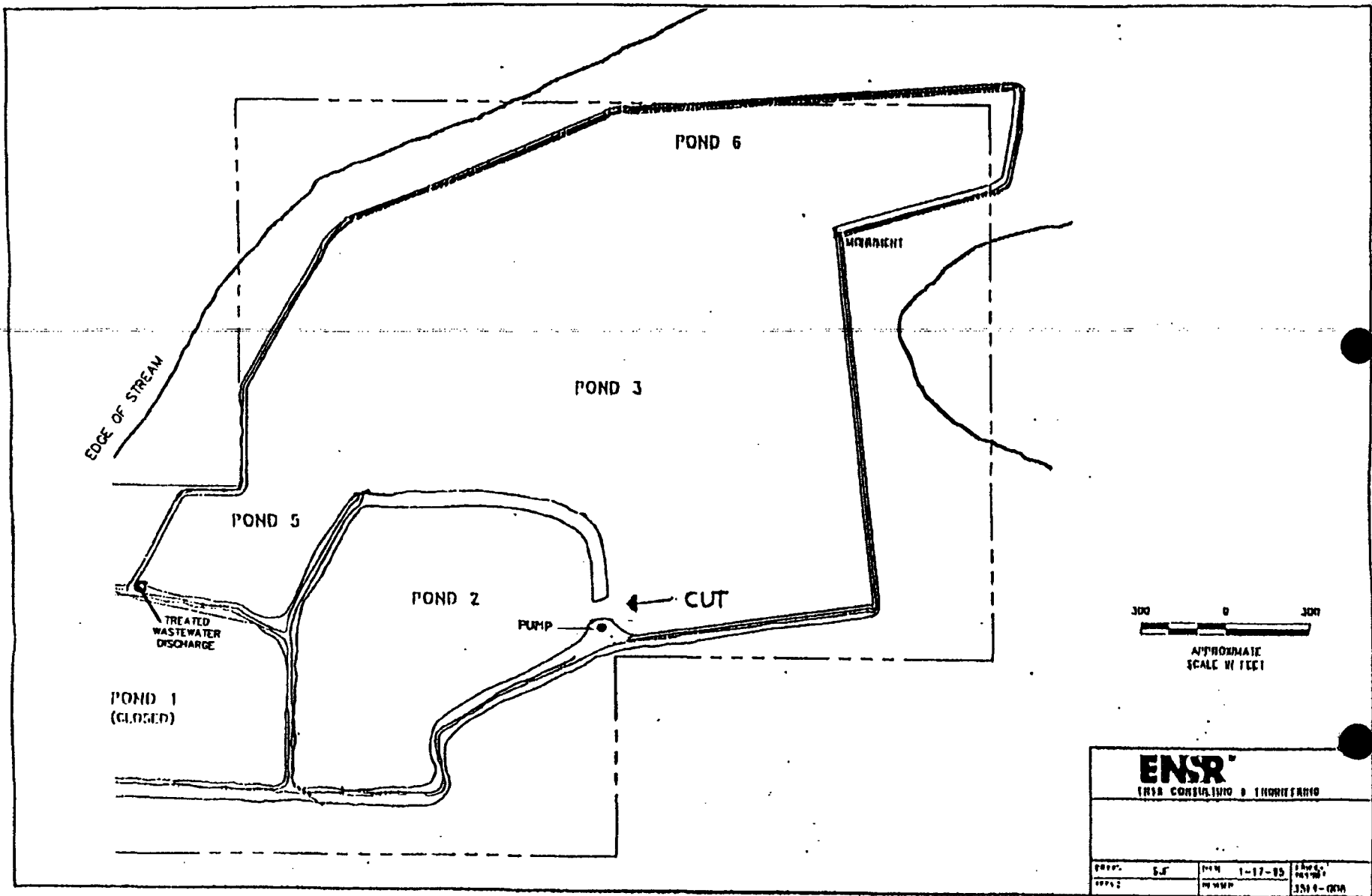


Phillip L. Youngblood  
Director of Environmental Affairs

lgm

Enclosure

cc: CLC, VRL, MPC, DGM  
Mr. Mike Norman, Foster Wheeler Environmental  
Mr. Dave Boyer, Covenant Technical Associates







GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Hazardous & Radioactive Materials Bureau  
2044 Galisteo  
P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-1557  
Fax (505) 827-1544



MARK E. WEIDLER  
SECRETARY

EDGAR T. THORNTON, III  
DEPUTY SECRETARY

October 3, 1997

Mr. Darrell Moore  
Environmental Mgr. for Water and Waste  
Navajo Refining Company  
501 East Main Street P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: Sampling and Disposal of Pipeline Filters**

Dear Mr. Moore:

The New Mexico Environment Department (NMED), Hazardous and Radioactive Materials Bureau (HRMB), has received your August 6, 1997 letter regarding the sampling plan and disposal of pipeline filters. After reviewing the sampling plan and results of the analysis for the filters that you submitted, NMED/HRMB came to the conclusion that the random composite selection method is appropriate for a total of 300 filters. However, we think that additional information is needed.

NMED/HRMB would like to know if Navajo Refining Company (NRC) can identify filters from areas of the refinery, the terminal, or other areas that gather significantly more arsenic than others. After this determination is made, NRC may be able to further delineate which filters are hazardous waste. If you wish to discuss these concerns, please contact me at (505) 827-1558.

Sincerely,

*Michael DeLeonardis*

Acting  
for

John M. Tymkowych  
RCRA Inspection Enforcement Program Manager  
Hazardous and Radioactive Materials Bureau

cc: Benito Garcia, Chief, HRMB  
Roger Anderson, Chief, Environmental Bureau, OCD

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278

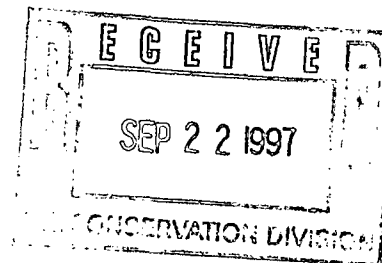


## REFINING COMPANY

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

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

September 18, 1997



Mark Ashley  
Geologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

### RE: Possible Lead Contamination Around Tanks, Navajo Refining

Dear Mr. Ashley:

On August 4, 1997, I took soil samples around tanks 112, 417, 418, and 419 where some concern was brought up about possible lead contamination. As you know, analysis showed no contamination, but a question as to how these samples were taken was raised. I'm writing this letter to explain the steps I took to obtain these samples.

Enclosed you will find a map showing the areas where these samples were taken. At spot #1, a soil sampler was used to get core samples to a depth of six feet. All of the soil was placed in a plastic bag and thoroughly mixed together. A sample was then taken from the bag with the remaining soil packed back into the hole made by the sampler. Spots 2, 3, 4, and 5 were also sampled in the same manner.

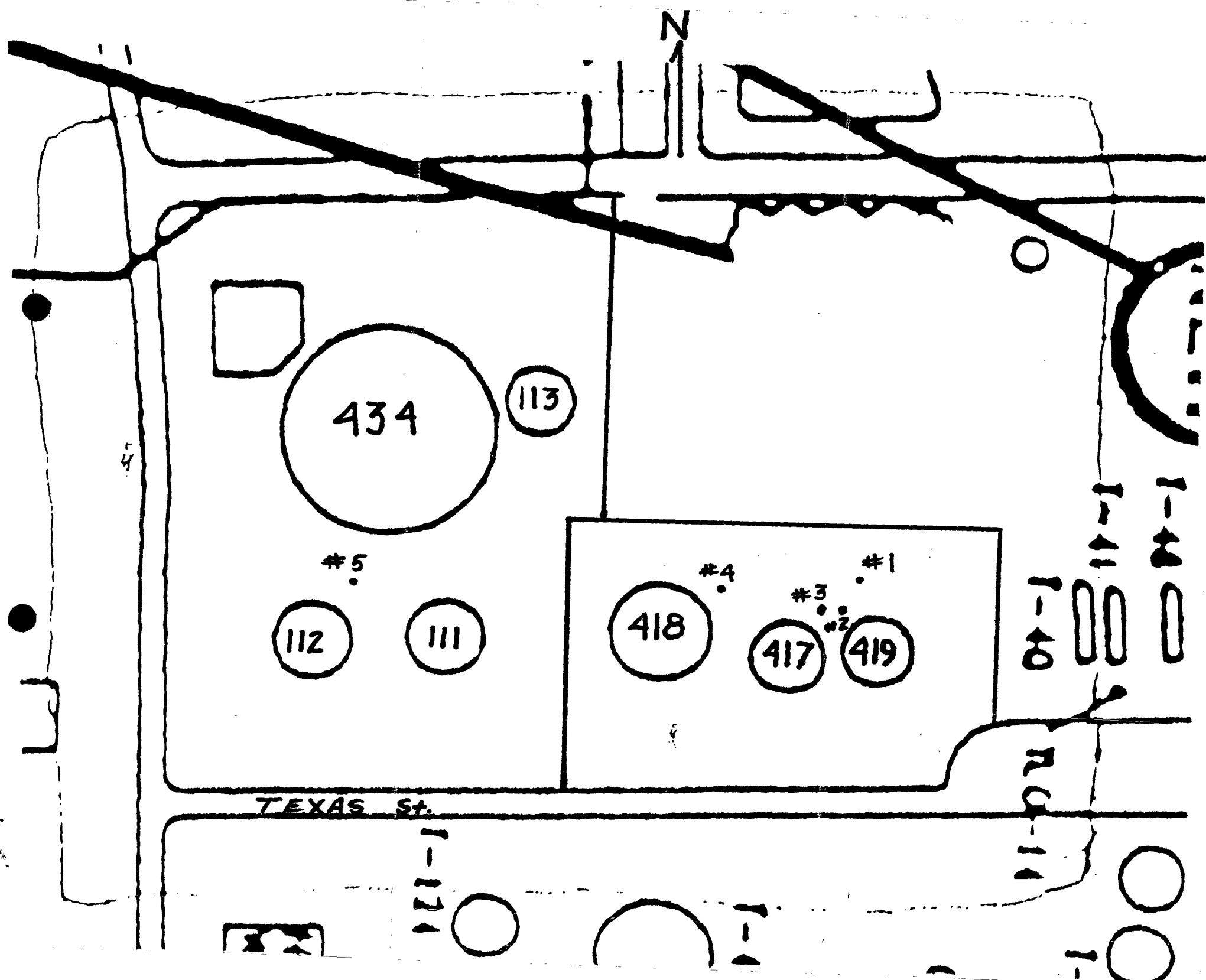
I hope I've answered your question, but if you have any more, please call me at (505) 748-3311. Thank you for your time in this matter.

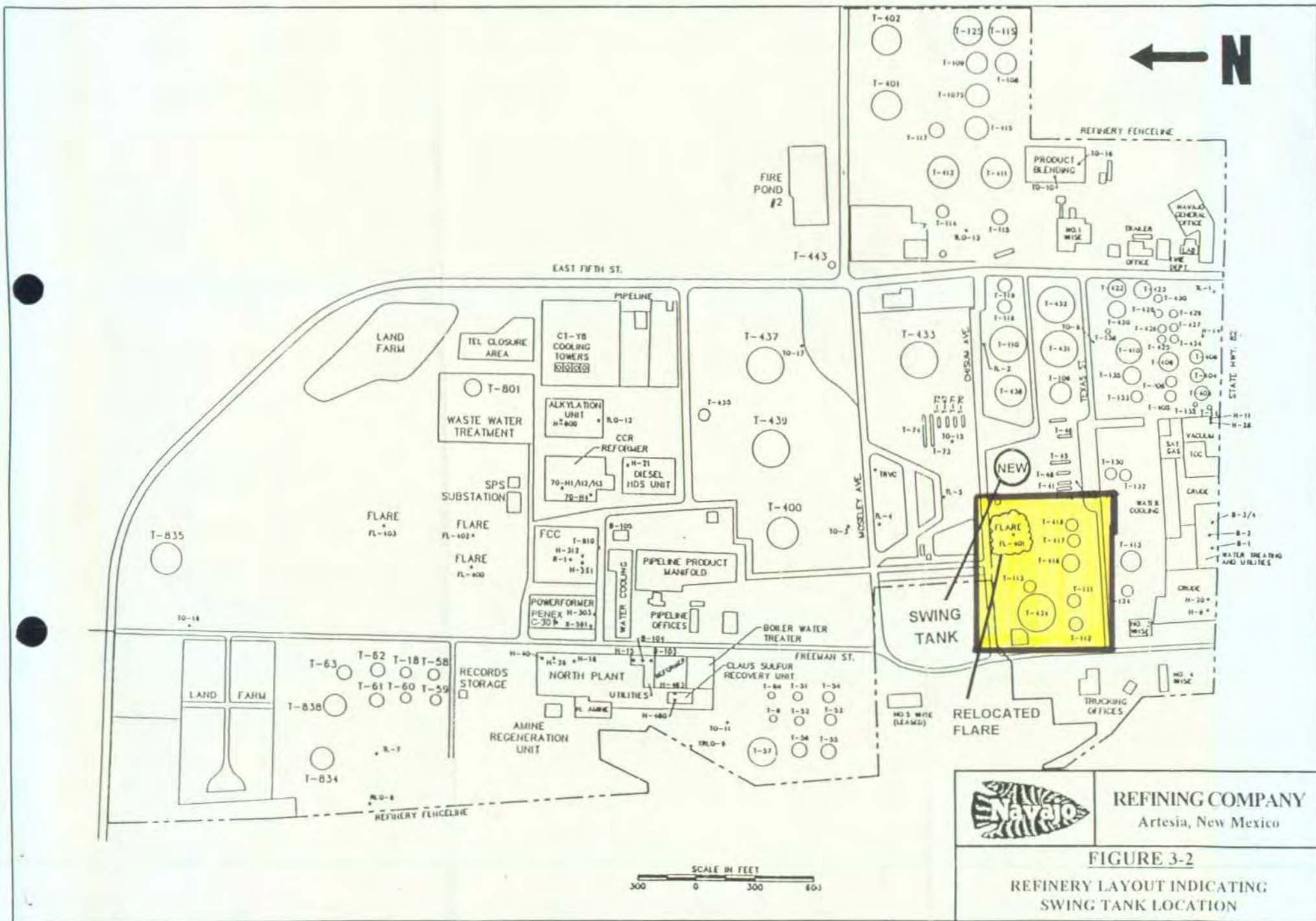
Sincerely,  
NAVAJO REFINING COMPANY

*Bryan Madrid*

Bryan Madrid  
Environmental Specialist

Encl.





MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time 1:15 PM	Date 9-9-97
<u>Originating Party</u> DARRELL MOORE		<u>Other Parties</u> MARK ASHLEY
<u>Subject</u> LEAD CONTAMINATION AT TANKS 417 & 418.		
<u>Discussion</u> THE OGD RECEIVED SAMPLE RESULTS ON AUGUST 28, 1997 SHOWING "NO DETECT" FOR LEAD. THE CENTER DID NOT STATE THE LOCATION OF THE SAMPLES, OR THE DEPTHS OF THE SAMPLES.		
<u>Conclusions or Agreements</u> DARRELL MOORE WILL PROVIDE THE LOCATIONS AND DEPTHS OF THE SAMPLES.		
<u>Distribution</u>	Signed Mark Ashley	



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

September 5, 1997

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-288-258-966**

Mr. Bryan Madrid  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: Authorization to Discharge of Hydrotest Water From Tank 972  
Eddy County, New Mexico**

Dear Mr. Madrid:

The New Mexico Oil Conservation Division (OCD) has completed a review of Navajo Refining Company's (Navajo) letter dated August 21, 1997 requesting the authorization to discharge of approximately 10,000 barrels of test water to the ground surface from the hydrostatic test of tank 972. The proposed location for the discharge is Navajo's Beeson Station, Eddy County, New Mexico. The requested discharge is hereby approved with the following conditions:

1. Permission will be obtained from the landowner(s) prior to discharge.
2. The test water will be discharged onto the ground surface in a manner to prevent erosion.
3. No test waters will be discharged to any lakes, perennial streams, rivers, or any surface bodies of water upon completion of a test.
4. The water will not exceed Water Quality Control Commission standards for ground water.

Please be advised that OCD approval does not relieve Navajo of liability should it later be found that contamination exists which could pose a threat to surface water, ground water, human health or the environment.

If you have any questions please feel free to contact Mark Ashley at (505) 827-7155.

Sincerely,

Roger C. Anderson  
Environmental Bureau Chief

RCA/mwa  
xc: OCD Artesia Office



**NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT**

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

September 5, 1997

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-288-258-965**

Mr. Bryan Madrid  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: Authorization to Discharge of Hydrotest Water From Tank 415  
Eddy County, New Mexico**

Dear Mr. Madrid:

The New Mexico Oil Conservation Division (OCD) has completed a review of Navajo Refining Company's (Navajo) letter dated August 20, 1997 requesting the authorization to discharge of approximately 22,500 barrels of test water to the ground surface from the hydrostatic test of tank 415. The proposed location for the discharge is Section 28, Township 18 South, Range 30 East, NMPM, Eddy County, New Mexico. The requested discharge is hereby approved with the following conditions:

1. Permission will be obtained from the landowner(s) prior to discharge.
2. The test water will be discharged onto the ground surface in a manner to prevent erosion.
3. No test waters will be discharged to any lakes, perennial streams, rivers, or any surface bodies of water upon completion of a test.
4. The water will not exceed Water Quality Control Commission standards for ground water.

Please be advised that OCD approval does not relieve Navajo of liability should it later be found that contamination exists which could pose a threat to surface water, ground water, human health or the environment.

If you have any questions please feel free to contact Mark Ashley at (505) 827-7155.

Sincerely,

Roger C. Anderson  
Environmental Bureau Chief

RCA/mwa  
xc: OCD Artesia Office

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

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

July 10, 1997

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

RECEIVED  
JUL 11 1997  
Environmental Bureau  
Oil Conservation Division

Ms. Susan Hoines  
NMED  
Hazardous and Radioactive Materials Bureau  
2044 Galisteo  
P.O. Box 26110  
Santa Fe, NM 87502

**RE: Old Oil/ Water Separator, Navajo Refining Co., Artesia, NM**

Dear Ms. Hoines,

In response to our phone conversation of July 10, 1997 concerning an old oil/water separator at this plant, I am forwarding this letter to delineate the circumstances surrounding this unit. Also, I will take this opportunity to explain exactly what Navajo intends to do with this cement basin and any waste that may be generated.

Into the early 1950's, Navajo used an oil/water separator as part of our waste water treatment process. This separator is located in the southern end of the plant (see map). In about 1953, this unit was taken out of service and its function was taken over by more modern separators in other areas of the plant. After being taken out of operation, the unit was disconnected from the sewer system and cleaned down to bare cement. This left an empty cement basin, divided into two sections, with each section being approximately 6' across x 24' long x 12' deep.

This basin sat empty (except for blow sand) for about 15 years. Sometime during the late 60's, the idea was brought up to use this cement basin as storage for off-spec asphalt that is occasionally made here in the plant. The idea being to store this product until room could be made to re-run it and bring it back up to spec. With that thought in mind, the basin was filled with off-spec asphalt. This asphalt sat in this basin for the better part of twenty years until, in 1996, OCD asked Navajo to get rid of the basin and its contents as part of the approval for our discharge plan. Working with OCD, Navajo got approval to dispose of this asphalt as non-hazardous waste at Controlled Recovery Incorporated's facility between Carlsbad and Hobbs. We then used backhoes and dump trucks to take the material out of the basin and transport it to CRI's facility.

We are now left with an empty cement basin with residue on the walls. What Navajo would like to do is as follows:

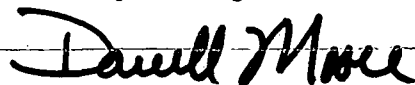
1. Sand Blast the walls down to bare concrete thereby removing any residue from the concrete so that only bare concrete remains and reasonable assurance is obtained that any later listed hazardous waste (KO51) that may have seeped into the concrete has been removed.
2. Collect all blast sand and residue and put it in 55 gallon drums with air tight lids.
3. Send these drums and their contents to Ensco's incinerator at El Dorado, Arkansas following all applicable regulations pertaining to the management of Hazardous Waste.
4. Collapse the cement basin in on itself and fill the void with dirt.
5. Contour the landscape back to original slope.



Navajo believes that this course of action should remove any concerns that NMED or OCD have about any listed wastes being tied up in this unit. Further, Navajo will be glad to notify both NMED and OCD when this work will take place to allow you the opportunity to observe the work and/or inspect the basin.

If there are any questions concerning this matter, please call me at 505-748-3311. Thank you for your time.

Sincerely,  
Navajo Refining Co.

A handwritten signature in black ink, reading "Darrell Moore". The signature is written in a cursive style with a horizontal line through the middle of the letters.

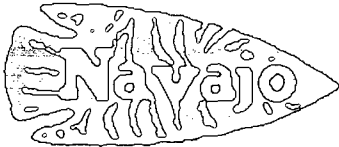
Darrell Moore  
Environmental Mgr. for Water and Waste

Encl.

cc: Roger Anderson, Chief, Environmental Bureau, OCD

TELEPHONE  
(505) 748-3311

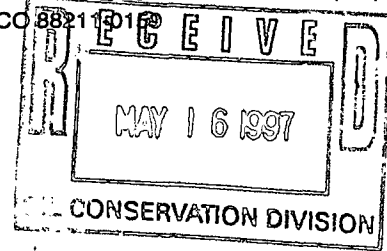
EASYLINK  
62905278



## REFINING COMPANY

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

May 14, 1997



FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P/L

Mr. Mark Ashley  
Geologist - Environmental Bureau  
N.M. Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505

### CERTIFIED MAIL/RETURN RECEIPT

P 155 358 602

**RE: GW-28 Discharge Plan Renewal, Navajo Refinery, Eddy County, New Mexico**

Dear Mr. Ashley:

Enclosed are Navajo Refining's comments on the deficiencies noted in your letter of September 6, 1996. Originally, these comments were due to reach you by February 14, 1997. As a result of David Griffin's resignation, Navajo asked for and OCD granted an extension to May 14, 1997. Our responses are as follows:

**Effluent Pipeline:** Navajo has tested the integrity of the three-mile effluent pipeline and those results are included. Also, sampling of the effluent is done annually and the results are sent to OCD and EPA.

**Lead Contamination** - The possible lead contamination between TKs 417 and 418 will be examined as follows: Each location will be core sampled. These samples will then be tested for SPLP lead. If the results show any lead that is a risk, the soil will be dug up and sent to ENSCO's incinerator at El Dorado, Arkansas. If the samples show that there is no risk from any lead, the soil will be left in place. This sampling will be completed by July 1, 1997 and, if needed, the soil will be removed by August 31, 1997.

**Drum Storage:** During the 1996 OCD inspection, several photos were taken of drums that were not properly stored. In general, Navajo does regular inspections of the plant to keep these instances to a minimum and, in addition, we have constructed containment in several areas to alleviate this problem. Specifically: Photo 1-15 - these drums have been removed and the contents put back thru the plant. Photo 1-16 - a cement pad with curbing has been constructed so that these drums and I-pacs have containment; Photo 1-20 - this drum is now stored inside the curbed cement pad along with the other drum; Photo 2-4 - this photo shows drums in the warehouse area that have been unloaded before being taken to their final destination in the plant. These drums contain material that are needed in the plant to keep processes working; therefore, they are not going to be kept in this area for more than a few days before being moved. It is Navajo's position that these chemicals are on cement in brand new drums. There is no pouring or pumping going on in this area and so the possibility of a leak is infinitesimally small. To require containment here is not practical. ; Photo2-5 - these drums will be put into fiberglass boats by July 31, 1997; Photo 2-6 - This concrete pad has been modified so that it now has secondary containment. To our knowledge, there are no other drums that are not on an impervious pad with containment. Also, all empty drums are triple rinsed, stored in a cement basin, on their sides with the bungs in place and aligned in a horizontal plane.

**Process Area:** In the September 6, 1996 OCD letter, reference was made to two areas where material was reaching the ground surface:

Pump 104 - this is a leaking diesel transfer pump that has no containment. There are several pumps in this area that are used to transfer diesel to the tanks just to the west of the pumps. These pumps currently have underground suction and Navajo is in the process of moving these pumps northwest and putting them on a cement pad with sumps that will drain to a sewer in the event of a leak. Also, the suction will be moved aboveground for added safety. This project should be complete by November 30, 1997.

Bundle Cleaning Areas - wastes generated at the bundle cleaning areas are not being completely contained within the existing pad and curb containment. Navajo is looking into erecting a curtain around these areas that will contain the spray within the curbed area. Currently, the spray can reach bare ground due to the effects of high winds on the spray. This modification will be completed by October 31, 1997.

To our knowledge, all other process areas are in compliance.

**Above Ground Tanks:** In your September 6, 1996 letter reference was made to the diesel storage tank in picture 2-1 not **appearing** to have the required containment. Calculations will be done by June 30, 1997 and, if needed, the berm will be modified to meet the requirement of being able to hold 1/3 more than the contents of the tank. This modification will be completed by July 31, 1997. To our knowledge, all other tanks have the required berming.

**Above Ground Saddle Tanks:** Several saddle tanks were brought to our attention during the 1996 inspection. The tank at the Slurry Slinger ( photo 1 - 10 ) has been moved onto a curbed pad in the area; the tank at Hudson Bay (photo 1-16) was put into a cemented curb area that was built to hold all of the drums and tanks in this area; the tank in photo 1-22 does not fit the widely held image of a saddle tank. This tank contains sulfuric acid and has been in this location for decades. Further, it is a permanent structure. Navajo will commit to building a berm around this tank, to hold 1/3 more than the total volume, by August 31, 1997; finally, the tank in photo 2-15 contains diesel to run compressors in the waste water treatment area. This tank will be placed in a fiberglass boat by July 31, 1997. To our knowledge, no other saddle tanks are out of compliance.

**Labeling:** Numerous drums were noted during the inspection that did not have proper labels to identify their contents. The drums noted have either been removed ( photos 1-3 and 1-11) or will be labeled (photos 1-15, 1-20, 1-22, and 2-15). These labels will be in place by July 31, 1997. To our knowledge, no other tanks, drums or containers are missing a label.

**Below Grade Tanks and Sumps:** In a letter to OCD dated September 25, 1996, David Griffin listed 18 sumps that do not have secondary containment. These sumps will be tested by August 31, 1997 and annually thereafter. OCD will be given 72 hour notice prior to the testing of any sump. To our knowledge, there are no other sumps that do not have secondary containment.

**Underground Process/Wastewater Lines:** Since November 1995, Navajo has had underway a comprehensive program of replacing all lines that are 25 years old or older. This project should be finished by December 31, 1998. Navajo will have all other underground process/wastewater pipelines tested by April 30, 1998. OCD is welcome to witness any testing that will be done and will be notified 72 hours prior to the test.

We look forward to working with the OCD in finalizing the discharge plan for our Lovington refinery. If there are any questions concerning this submittal, please do not hesitate to call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,  
Navajo Refining Company

A handwritten signature in black ink, reading "Darrell Moore". The signature is written in a cursive style with a large, stylized "D" at the beginning.

Darrell Moore  
Sr. Environmental Specialist

Encl.



NAVAJO REFINING COMPANY  
P.O. DRAWER 159  
501 EAST MAIN STREET  
ARTESIA, NEW MEXICO 88210  
PHONE: (505) 748-3311

ENGINEERING DEPARTMENT  
FAX: (505) 748-9077

## SENDING TO:

NAME Mrs. Roger Anderson, Chief  
ORGANIZATION/FIRM D.C.D., Environmental Business  
TELECOPY # 505-827-8177

## SENDING FROM:

NAME PHIL YOUNGBLE DOD  
DATE 5-1-97 NUMBER OF PAGES, INCLUDING THIS COVER PAGE 3

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL TRISH AT EXT. 270,

## MESSAGE:

Rogers:

We want to square this with you  
before proceeding.

This is related to the phone message I  
left you related to "jurisdiction".

Please call.

Phil Youngble

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is privileged and confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error or are not sure whether it is privileged, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service.

Thank you!



GARY E. JOHNSON  
GOVERNOR

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**  
*District 4*  
1914 W. Second St.  
Roswell, New Mexico 88201  
(505) 624-6046



MARK E. WEIDLER  
SECRETARY

EDGAR T. THORNTON, III  
DEPUTY SECRETARY

April 29, 1997

Phillip L. Youngblood  
Director of Environmental Affairs  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

Dear Mr. Youngblood:

This letter concerns on-site disposal of clean fill material presently being stored at Navajo Refinery. A request has been made for approval to dispose of stockpiled concrete, soil, rock, and some chunks of asphalt on-site.

In accordance with the Solid Waste Management Regulations, clean fill material such as rock, clean soil, and broken concrete may be disposed of on-site. All other material at the stockpile location such as metal, asphalt, wood, and any other solid waste must be removed and disposed of at an approved solid waste disposal facility.

If clean fill is buried on-site, it must be covered with at least two feet of clean earth. It is recommended that the covered area be reseeded with vegetation to prevent soil erosion.

Also, some tree stumps and tree limbs are present at the site that are to be disposed of. It is permissible to burn these items provided a burn permit is obtained from the Environment Department prior to conducting the burn. A permit can be obtained at the Carlsbad Field Office of the Environment Department, 406 North Guadalupe, Carlsbad, N.M. (505) 885-9023.

If you have any questions, please contact Fred Bennett at (505) 624-6124.

Sincerely,

A handwritten signature in cursive script, reading "Fred H. Bennett".

Frederick H. Bennett  
Environmental Specialist

Mr. Youngblood  
April 29, 1997  
Page 2

cc Chuck Hules, Program Manager  
Solid Waste Compliance Section  
Garrison McCaslin, District IV Manager  
James Smith, Acting HPM-I, Carlsbad  
Fred Bennett, Environmental Specialist



NAVAJO REFINING COMPANY  
P.O. BOX 159  
501 E. MAIN STREET  
ARTESIA, NEW MEXICO 88210  
PHONE: (505) 748-3311

ENGINEERING DEPARTMENT  
FAX: (505) 748-9077

SENDING TO: NAME: MARK ASHLEY  
ORGANIZATION/FIRM: OIL CONSERVATION DIVISION  
FAX #: 505 827 8177

SENDING FROM: NAME: NEAL LEWIS  
DATE: 4-30-97 NO. OF PAGES: 3

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL TRICIA AT EXT. 270

MATK

PLEASE LOOK @ THE ATTACHED SKETCH.

DARRELL MOORE & I WOULD LIKE TO VISIT

WITH YOU AFTER YOU GET TO SEE THE

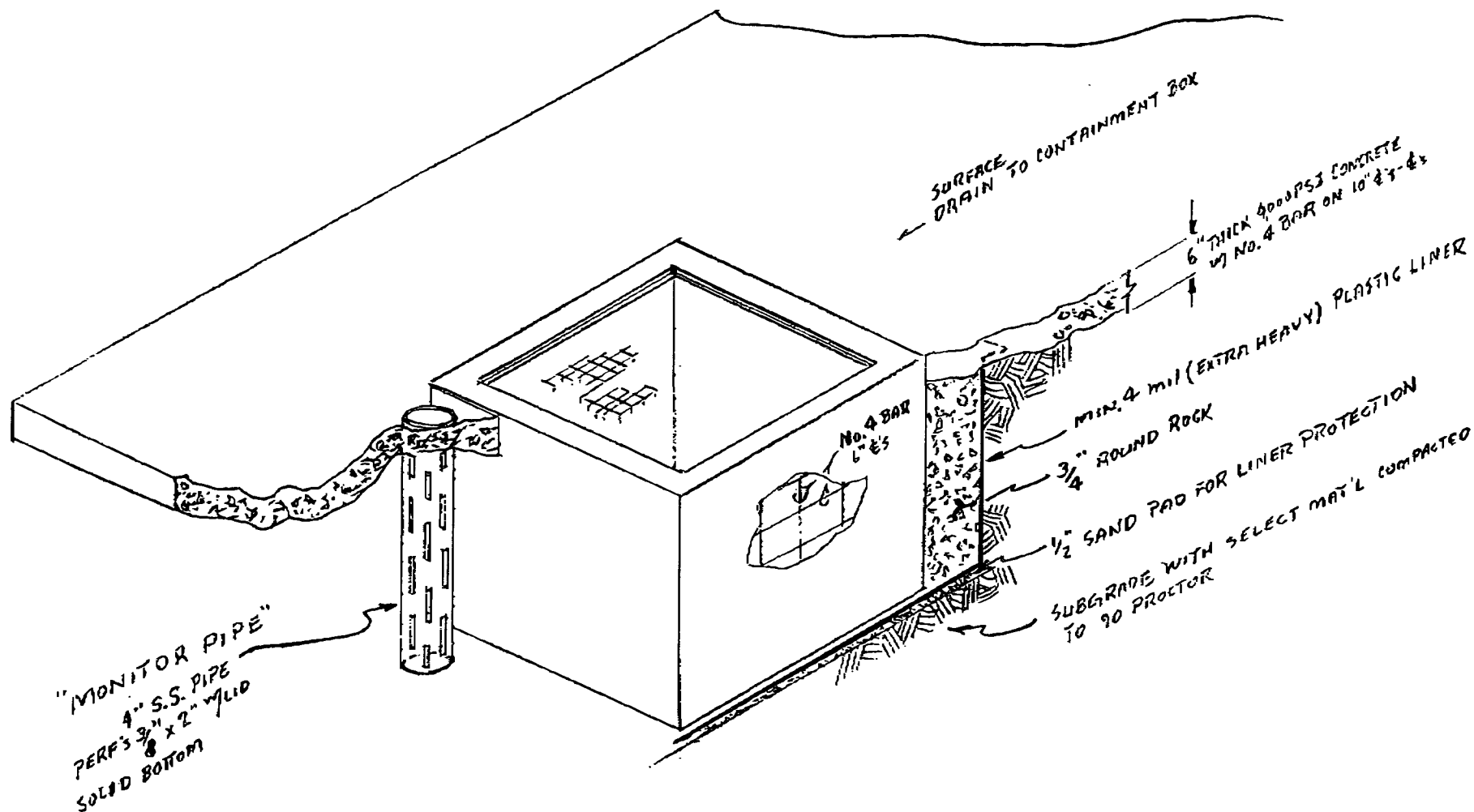
SKETCH # 01.

THANKS!

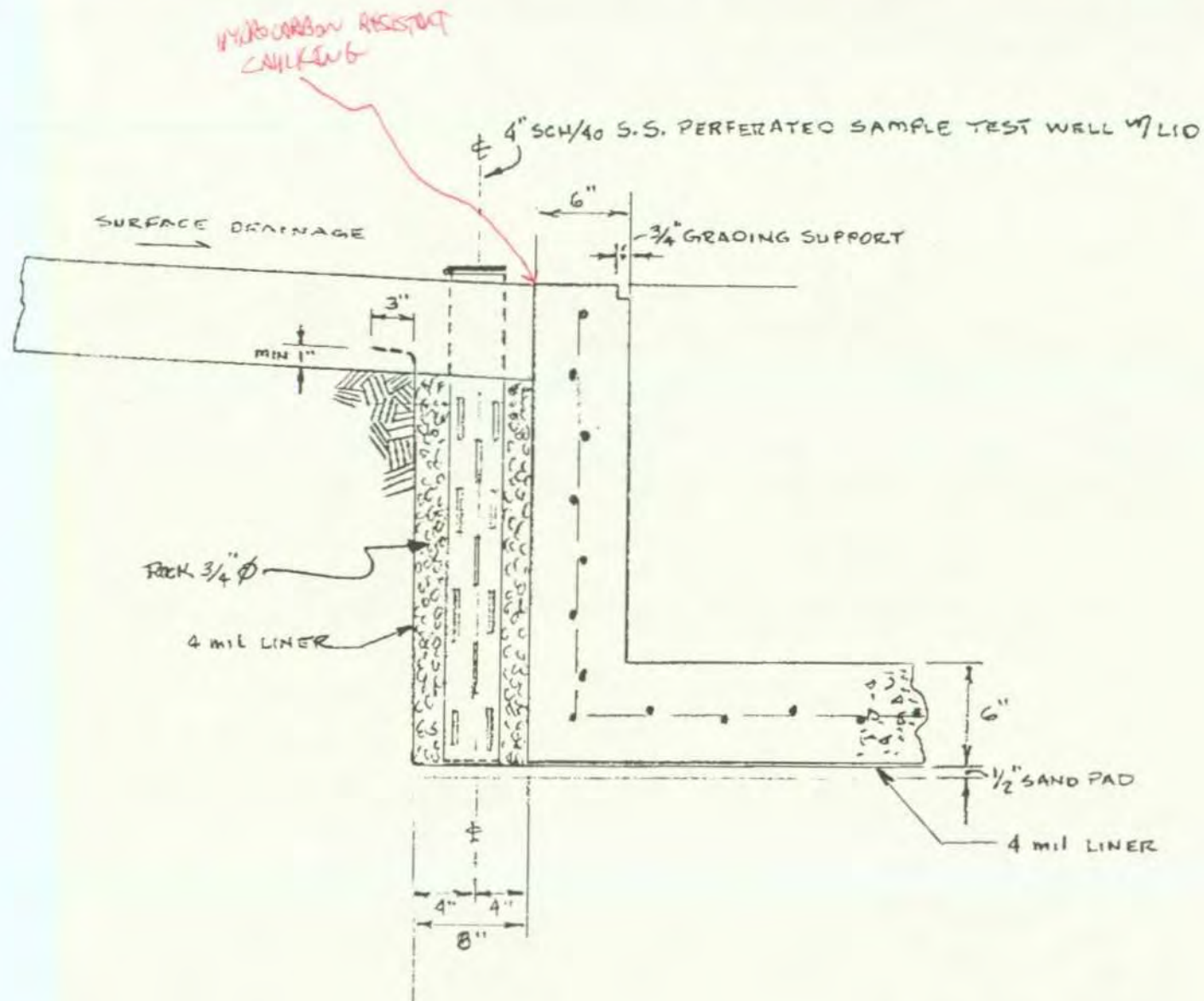
Neal

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this communication is intended only for the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error or are not sure whether it is privileged, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you!





GENERAL PLAN  
for  
3FT x 3FT x 3FT  
SEWER BOX  
NO SCALE 4-29-97  
SHEET 01 PAGE 1 OF 2





STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

April 1, 1997

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-269-269-295**

Mr. Darrell Moore  
Environmental Specialist  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: GROUND WATER REMEDIATION AND MONITORING  
NAVAJO ARTESIA REFINERY  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Moore:

The New Mexico Oil Conservation Division (OCD) has completed a review of Navajo Refining Company's February 26, 1997 "1996 ANNUAL GROUND WATER AND TREATMENT SYSTEM MONITORING REPORT, NAVAJO REFINING". This document contains the results of Navajo's ground water remediation and monitoring at Navajo's Artesia Refinery during the 1996 calendar year.

Based upon a review of the above referenced document, the OCD requires that Navajo provide the OCD with the following information by July 1, 1997:

1. The report does not contain the annual polynuclear aromatic hydrocarbon (PAH), metals nor cations/anions analyses for water samples from monitor wells KWB-1A, KWB-1C, KWB-2A, KWB-3A, KWB-7, KWB-9, KWB-11A, KWB-12A, MW-18, MW-28, MW-29 and MW-45 as required in the OCD's June 14, 1996 "GROUND WATER REMEDIATION DISCHARGE PLAN GW-28 MODIFICATION". Please provide the OCD with this information.
2. The report does not contain the quarterly halogenated organics analyses for water samples from monitor wells KWB-1A, KWB-1C, KWB-2A, KWB-3A, KWB-7, KWB-9, KWB-11A, KWB-12A, MW-18, MW-28, MW-29 and MW-45 as required in the OCD's June 14, 1996 "GROUND WATER REMEDIATION DISCHARGE PLAN GW-28 MODIFICATION". Please provide the OCD with this information.

Mr. Darrell Moore  
April 1, 1997  
Page 2

3. The report states that Navajo is working on developing additional sites for hydrocarbon recovery. Please provide the OCD with a work plan for additional ground water and product recovery wells. The work plan will address the use of ground water recovery wells to contain contamination which is migrating across the boundary of Navajo's facility onto adjacent lands and installation of recovery wells in areas with no current product or ground water recovery.

Please submit the above required information to the OCD Santa Fe Office and a copy to the OCD Artesia Office.

The OCD also requires that all future site maps contain the locations of all water quality sampling points including the locations of the irrigation wells.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,



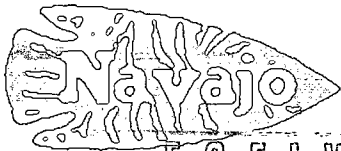
William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: OCD Artesia District Office  
Richard D. Mayer, EPA Region VI  
Benito Garcia, NMED Hazardous & Radioactive Materials Bureau

PS Form 3800, April 1995	
US Postal Service <b>Receipt for Certified Mail</b> No Insurance Coverage Provided. Do not use for International Mail (See reverse)	
Sent to	
SHEET & NUMBER	
Post Office, State, & ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

RECEIVED

FEB 10 1997

CONSERVATION DIVISION

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

February 7, 1997

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

Mr. Mark Ashley  
NM Oil Conservation Division  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87501

CERTIFIED MAIL/RETURN RECEIPT  
P 355 936 394

**RE: Discharge Plan Renewal for Navajo Refining Co., Eddy County, New Mexico**

Dear Mark,

As we discussed on the phone, David Griffin has resigned from his position with Navajo Refining. Part of his work load, that has now been given to me, is the renewal of the discharge permit for this facility. It is my understanding that certain items have a deadline of February 14, 1997. With Dave's departure and my trying to get up to speed on several projects, Navajo requests that the deadline be extended to May 16, 1997. This should give me ample time to round up the necessary documents and get them to you.

If there are any questions concerning this matter, please call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,  
Navajo Refining Co.

Darrell Moore  
Sr. Environmental Specialist



*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**  
*Harold Runnels Building*  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-0186

MARK E. WEIDLER  
SECRETARY

GARY E. JOHNSON  
GOVERNOR

July 1, 1997

RECEIVED

JUL 2 1997

Mr. Robert Hall  
Lea Land Inc.  
1300 West Main Street  
Oklahoma City , Oklahoma 73106

Environmental Bureau  
Oil Conservation Division

**RE: Disposal Authorization For Solid Waste Permit No. SWM-131401**

Dear Mr. Hall:

This letter serves to respond to your letter of May 28, 1997 regarding the disposal of non-hazardous waste generated from oil and gas industry facilities.

The New Mexico Environment Department (NMED) recently met with the New Mexico Oil Conservation Division (OCD) regarding your request. Under New Mexico Law, OCD regulates non-domestic wastes generated and associated with oil and gas production and refinement. You will need to obtain permission from OCD to dispose of certain wastes that are unique to the oil and gas industry. However, certain wastes may have properties that may create dual regulatory authority.

At our meeting with OCD it was determined that certain wastes that you listed on Exhibit A can be disposed at the Lea Land Inc. landfill under NMED's permit as long as the waste streams were non-hazardous and not unique to the oil and gas industry. The wastes that may not necessarily be unique to the oil and gas industry are as follows: hydroprocessing catalyst; defluorinator catalyst; activated carbon; isomerization catalyst, dessicants molecular sieve; dessicants activated alumina; debris; off-spec sulfur; sandblasting sand; support balls; tower packing materials, reformer catalyst; used oil filters; FCC catalyst; filter elements; scrap metal; plant trash; and construction/demolition debris. These specified wastes can be disposed at the Lea Land Inc. landfill as long as they are tested to ensure that they are not hazardous in accordance with 20 NMAC 9.1.

With respect to the other wastes listed on your Exhibit A, you will need to deal directly with OCD. I suggest you contact Roger Anderson if you desire to pursue this matter further. Mr. Anderson can be reached at (505) 827-7152 and his mailing address is 2040 S. Pacheco, Santa Fe, New Mexico 87505.

At the time NMED issued the permit, the waste streams you addressed

Mr. Robert Hall, President  
July 1, 1997  
Page 2

in your May 28, 1997 letter were not anticipated to be accepted at the Lea Land Inc. landfill. Had it been anticipated that your waste streams might have included oil and gas industry wastes, the issue might have been clarified earlier.

Please feel free to contact me to further clarify NMED's position on your request or to discuss this matter in further detail, if you desire.

Sincerely,



Don Beardsley  
Water Resource Engineering Specialist I  
Solid Waste Bureau

cc: Mark Weidler, Secretary  
Roger Anderson, OCD  
Ana Marie Ortiz, OGC





2-5-97

Effluent Line Sump Box, Waste Water Treater.

A Level Was Established And Held Constant;  
In Waste Water Treater Sump Box From 4<sup>30</sup> PM  
Till 8<sup>30</sup> PM 2-5-97, For Line Test Purposes.

H. Rodin, Jr. Witness

Jerry Boyce

WWW.NMENV.STATE.NM.US

5. Product and Waste Disposal:

All recovered product, waste filters or treatment system waste products will be recycled and/or disposed of at an OCD approved facility or in an OCD approved manner. *Commercial solid waste from Navajo's offices, warehouses and lunch rooms, which includes but is not limited to paper trash, packaging materials, and food scraps along with construction and demolition debris, which includes but is not limited to steel, glass, brick, concrete, roofing materials, pipe, wallboard, lumber, rocks, soil, trees and other vegetative matter is approved for disposal at a municipal solid waste facility servicing the area. The disposal of these commercial solid wastes, construction and demolition debris as defined in 20 NMAC 9.1.105.O and T shall not result in a violation of 20NMAC9.1.107.C or any other applicable section of the New Mexico solid waste regulations.*

IF NOT CONTAMINATED  
WITH ANY HYDROCARBONS OR  
METALS.

13. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure, ~~or isolation of the unit along with filling full or above normal operating level and observing for any loss of level for 4 hours~~, and/or visual inspection of cleaned out tanks and/or sumps. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing. All required testing will be completed by December 31, 1996. A plan and schedule will be provided to the OCD by February 14, 1997 for properly containing, repairing and/or replacing all below grade tanks, sumps, and pits which do not meet OCD requirements.

OR OTHER OCD APPROVED METHODS

# The Santa Fe New Mexican

Since 1849. We Read You.

NEW MEXICO OIL CONSERVATION  
ATTN: SALLY MARTINEZ  
2040 S. PACHECO ST.  
SANTA FE, NM 87505

AD NUMBER: 526216

ACCOUNT: 56689

LEGAL NO: 60061

P.O. #:

192 LINES once at \$

Affidavits: \_\_\_\_\_

Tax: \_\_\_\_\_

Total: \$ no charge

## NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS  
AND NATURAL  
RESOURCES  
DEPARTMENT

OIL CONSERVATION  
DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico, 87505, Telephone (505) 827-7131:

(GW-28) - Navajo Refining Company, David Griffin, (505) 743-3311, P.O. Box 159, Artesia, New Mexico, 88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 9, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to an 85 acre evaporation pond system located approximately 3 miles east of the refinery on Navajo property adjacent to the Pecos River. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth of approximately 10 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond, ground water is at a depth of 5 feet with a total dissolved solids concentration of approximately

2,500 mg/l. The discharge plan addresses how spills, leaks, and other potential discharges to the ground will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday thru Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plans based on information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 24th day of June, 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION  
WILLIAM J. LEWAY,  
Director  
Legal #60061  
Pub. July 19, 1996

## AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO  
COUNTY OF SANTA FE

I, BETSY PERNER being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily news paper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 60061 a copy of which is hereto attached was published in said newspaper once each week for one consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 19th day of JULY 1996 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/

Betsy Perner  
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 19th day of JULY A.D., 1996



OFFICIAL SEAL

Janet L. Montoya

NOTARY PUBLIC - STATE OF NEW MEXICO

Janet L. Montoya  
MY COMMISSION EXPIRES 12/30/99

et • P.O. Box 2048 • Santa Fe, New Mexico 87501

# Affidavit of Publication

No. 15542

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

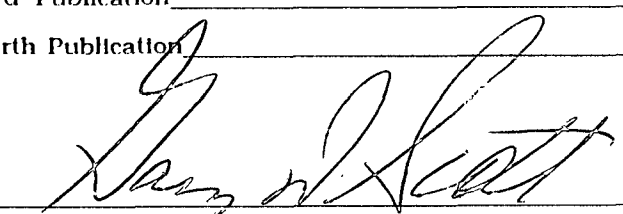
was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks on the same day as follows:

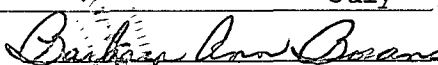
First Publication July 2, 1996

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_

  
Subscribed and sworn to before me this 5th day of July 19 96

  
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1999

# Copy of Publication

## LEGAL NOTICE

### NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-28) - Navajo Refining Company, David Griffin, (505) 748-3311, P.O. Box 159, Artesia, New Mexico, 88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids

concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to an 85 acre evaporation pond system located approximately 3 miles east of the refinery on Navajo property adjacent to the Pecos River. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth of approximately 10 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet with a total dissolved solids concentration of approximately 6,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any

proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest. If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on the information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 24th day of June 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION  
s-William J. LeMay  
WILLIAM J. LEMAY,

Director

SEAL  
Published in the Artesia Daily Press, Artesia, N.M. July 2, 1996.

Legal 15542

OK MA  
7-10-96

# The Santa Fe New Mexican

Since 1849 We Read You

NEW MEXICO OIL CONSERVATION  
ATTN: SALLY MARTINEZ  
2040 S. PACHECO ST.  
SANTA FE, NM 87505

AD NUMBER: 520000

ACCOUNT: 56689

LEGAL NO: 59967

P.O. #: 96199002997

187 LINES once at \$ 74.80

Affidavits: 5.25

Tax: 5.00

Total: \$ 85.05

NOTICE OF PUBLICATION charge plan address low  
STATE OF NEW MEXICO spills, leaks, and other acci-  
dental discharge into the sur-  
face of the map.

ENERGY, MINERALS  
AND NATURAL  
RESOURCES  
DEPARTMENT

OIL CONSERVATION  
DIVISION

Any interested person may  
obtain further information  
from the Oil Conservation Di-  
vision and may submit writ-  
ten comments to the Director  
of the Oil Conservation Di-  
vision at the address given

Notice is hereby given that  
pursuant to New Mexico Wa-  
ter Quality Control Commis-  
sion Regulations, the follow-  
ing discharge plan renewal  
application has been submit-  
ted to the Director of the Oil  
Conservation Division, 2040  
South Pacheco, Santa Fe,  
New Mexico, 87505, Tele-  
phone (505) 827-7131:

(GW-28) - Navajo Refining  
Company, David Griffin,  
(505) 748-3311, P.O. Box 159,  
Artesia, New Mexico, 88211.  
0159 has submitted an appli-  
cation for renewal of its pre-  
viously approved discharge  
plan for the Artesia Refinery  
located in the SE/4 of Section  
1, E/2 of Section 8, W/2 of  
Section 9, N/2 of Section 12,  
Township 17 South, Range 26  
East, NMPM, Eddy County,  
New Mexico. Approximately  
400,000 gallons per day of  
treated refinery waste water  
with a total dissolved solids  
concentration of approxi-  
mately 2,300 mg/l is dis-  
charged from the facility  
waste water treatment plant  
by pipeline to an 85 acre  
evaporation pond system lo-  
cated approximately 3 miles  
east of the refinery on Na-  
vajo property adjacent to the  
Pecos River. Ground water  
most likely to be affected by  
an accidental discharge in  
the refinery area is at a depth  
of approximately 2,500 mg/l,  
and in the pond area ground  
water is at a depth of 5 to 10  
feet with a total dissolved sol-  
ids concentration of approxi-  
mately 5,000 mg/l. The dis-

charge plan may be viewed at  
the above address between  
8:00 a.m. and 4:00 p.m., Mon-  
day thru Friday. Prior to rul-  
ing on any proposed dis-  
charge plan or its modifica-  
tion, the Director of the Oil  
Conservation Division shall  
allow at least thirty (30) days  
after the date of publication  
of this notice during which  
comments may be submitted  
to him and a public hearing  
may be requested by any in-  
terested person. Requests  
for a public hearing shall set  
forth the reasons why a hear-  
ing should be held. A hearing  
will be held if the Director de-  
termines there is significant  
public interest.  
If no public hearing is held,  
the Director will approve or  
disapprove the proposed  
plan based on information  
available. If a public hearing  
is held, the Director will ap-  
prove or disapprove the pro-  
posed plans based on infor-  
mation in the discharge plan  
application and information  
submitted at the hearing.

GIVEN under the Seal of  
New Mexico Oil Conserva-  
tion Commission at Santa Fe,  
New Mexico, on this 24th day  
of June, 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION  
WILLIAM J. LEMAY,  
Director  
Legal #59967  
Pub. July 2, 1996

## AFFIDAVIT OF PUBLICATION

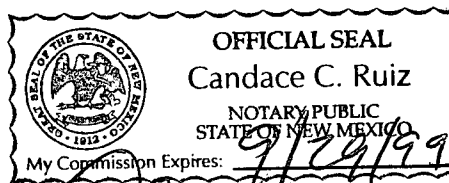
STATE OF NEW MEXICO  
COUNTY OF SANTA FE

I, BETSY PERNER being first duly sworn declare and  
say that I am Legal Advertising Representative of THE SANTA  
FE NEW MEXICAN, a daily news paper published in the English  
language, and having a general circulation in the Counties of  
Santa Fe and Los Alamos, State of New Mexico and being a News-  
paper duly qualified to publish legal notices and advertise-  
ments under the provisions of Chapter 167 on Session Laws of  
1937; that the publication # 59967 a copy of which is  
hereto attached was published in said newspaper once each  
week for one consecutive week(s) and that the no-  
tice was published in the newspaper proper and not in any  
supplement; the first publication being on the 2nd day of  
JULY 1996 and that the undersigned has personal  
knowledge of the matter and things set forth in this affida-  
vit.

/S/

LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this  
2nd day of JULY A.D., 1996



*Candace C. Ruiz*

LEFT OUT  
DEPT  
7-15-96

P.O. Box 2048 Santa Fe, New Mexico 87501

505-983-3303 • (FAX) 505-984-1785

986-3071



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

June 26, 1996

**ARTESIA DAILY PRESS**  
**P. O. Box 179**  
**Artesia, New Mexico 88210**

**ATTN: ADVERTISING MANAGER**

**RE: NOTICE OF PUBLICATION**

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*Dear Sir/Madam:*

*Please publish the attached notice one time immediately on receipt of this request. Please proofread carefully, as any error in a land description or in a key word or phrase can invalidate the entire notice.*

*Immediately upon completion of publication, please send the following to this office:*

- 1. Publisher's affidavit in duplicate.*
- 2. Statement of cost (also in duplicate.)*
- 3. CERTIFIED invoices for prompt payment.*

*We should have these immediately after publication in order that the legal notice will be available for the hearing which it advertises, and also so that there will be no delay in your receiving payment.*

*Please publish the notice no later than* July 3 *, 1996.*

*Sincerely,*

*Sally Martinez*  
Sally E. Martinez  
Administrative Secretary

*Attachment*



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

June 26, 1996

**THE NEW MEXICAN**  
202 E. Marcy  
Santa Fe, New Mexico 87501

**RE: NOTICE OF PUBLICATION**

**PO #96-199-002997**

**ATTN: Betsy Perner**

**Dear Sir/Madam:**

*Please publish the attached notice one time immediately on receipt of this request. Please proofread carefully, as any error in a land description or in a key word or phrase can invalidate the entire notice.*

*Immediately upon completion of publication, please send the following to this office:*

1. *Publisher's affidavit.*
2. *Invoices for prompt payment.*

*We should have these immediately after publication in order that the legal notice will be available for the hearing which it advertises, and also so that there will be no delay in your receiving payment.*

*Please publish the notice on Tuesday, July 2, 1996.*

*Sincerely,*

*Sally Martinez*  
Sally E. Martinez  
Administrative Secretary

**Attachment**



## NOTICE OF PUBLICATION

### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

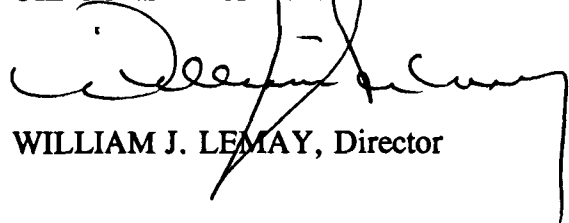
(GW-28) - Navajo Refining Company, David Griffin, (505) 748-3311, P.O. Box 159, Artesia, New Mexico, 88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to an 85 acre evaporation pond system located approximately 3 miles east of the refinery on Navajo property adjacent to the Pecos River. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth of approximately 10 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet with a total dissolved solids concentration of approximately 6,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on the information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 24th day of June 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY, Director

S E A L

## NOTICE OF PUBLICATION

### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

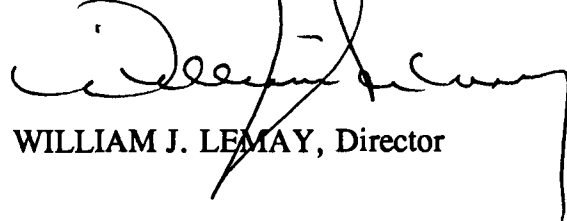
(GW-28) - Navajo Refining Company, David Griffin, (505) 748-3311, P.O. Box 159, Artesia, New Mexico, 88211-0159 has submitted an application for renewal of its previously approved discharge plan for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 400,000 gallons per day of treated refinery waste water with a total dissolved solids concentration of approximately 2,300 mg/l is discharged from the facility waste water treatment plant by pipeline to an 85 acre evaporation pond system located approximately 3 miles east of the refinery on Navajo property adjacent to the Pecos River. Ground water most likely to be affected by an accidental discharge in the refinery area is at a depth of approximately 10 feet with a total dissolved solids concentration of approximately 2,500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet with a total dissolved solids concentration of approximately 6,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on the information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 24th day of June 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



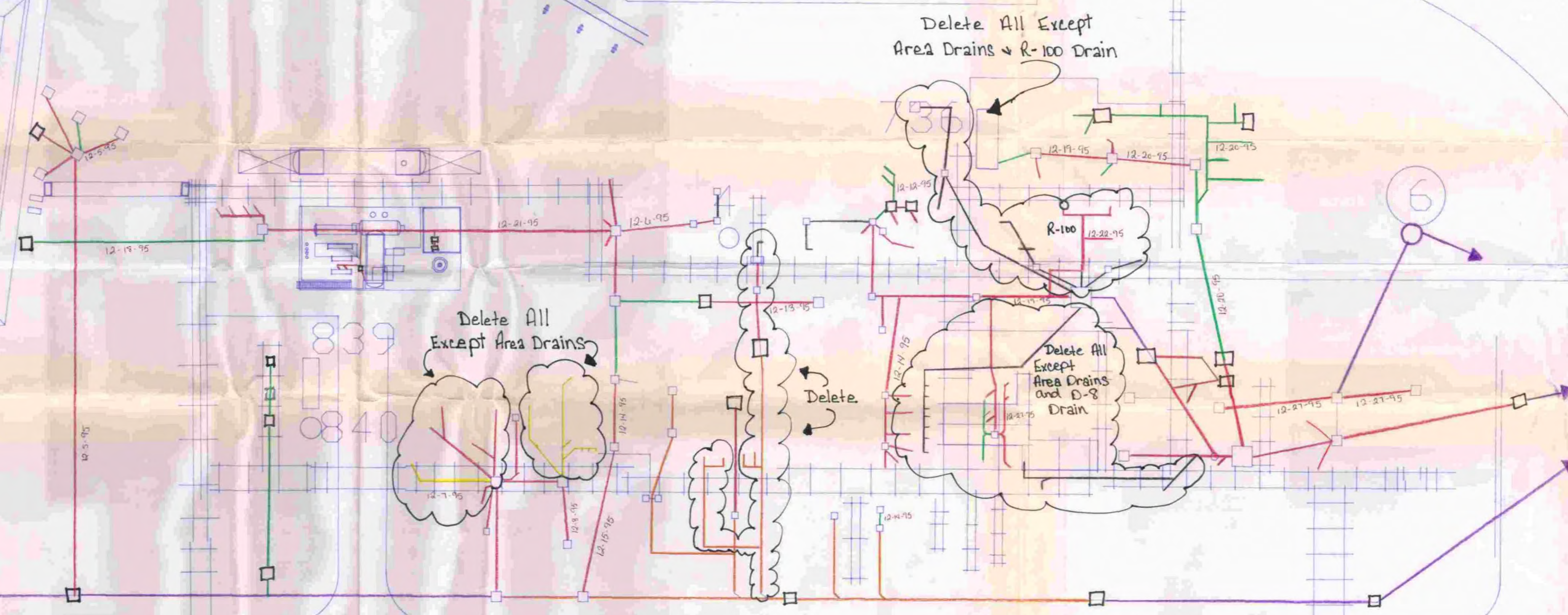
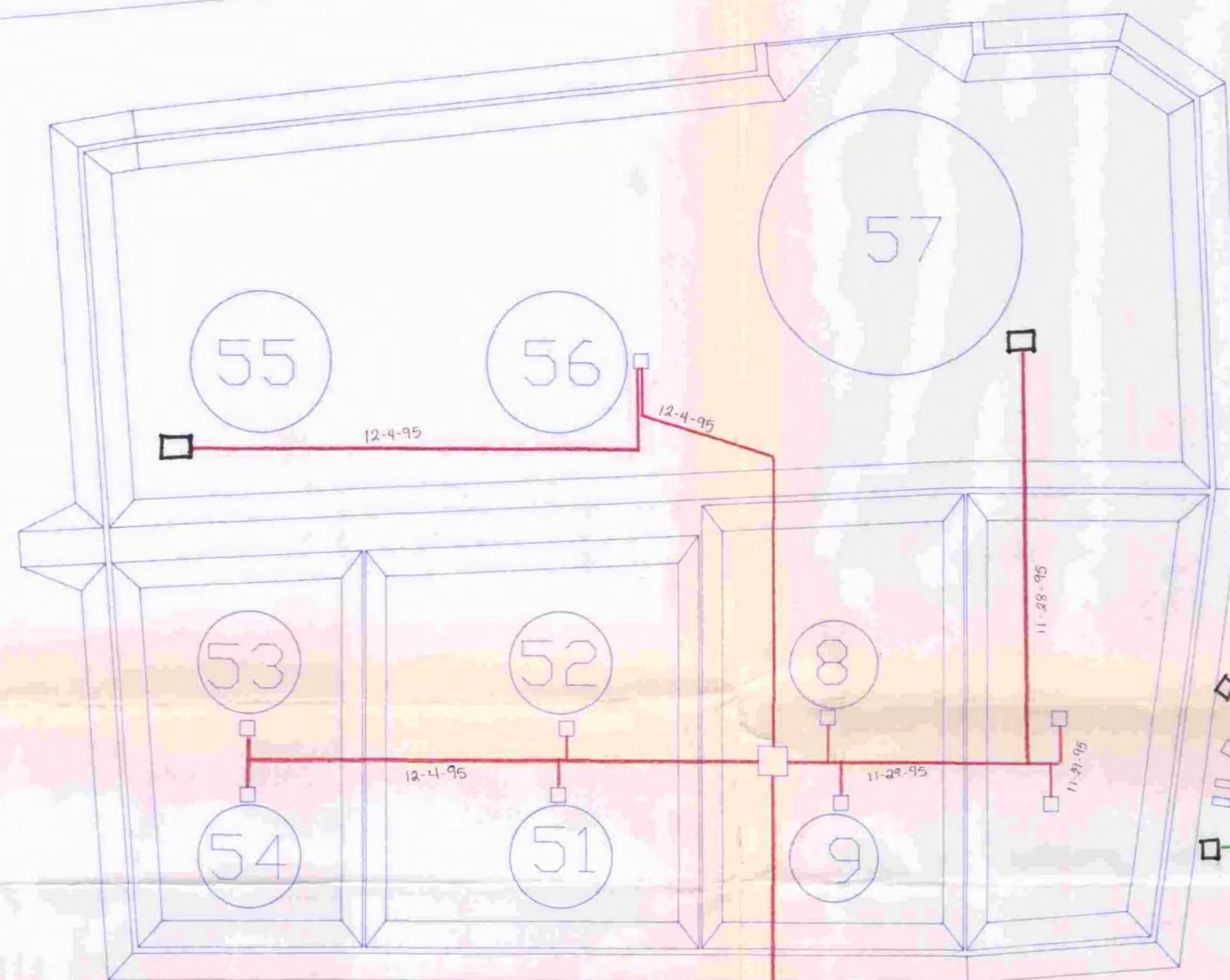
WILLIAM J. LEMAY, Director

SEAL









ISSUED FOR  
JUN 17 1996  
REFERENCE ONLY

NOTES

REFERENCE DRAWINGS

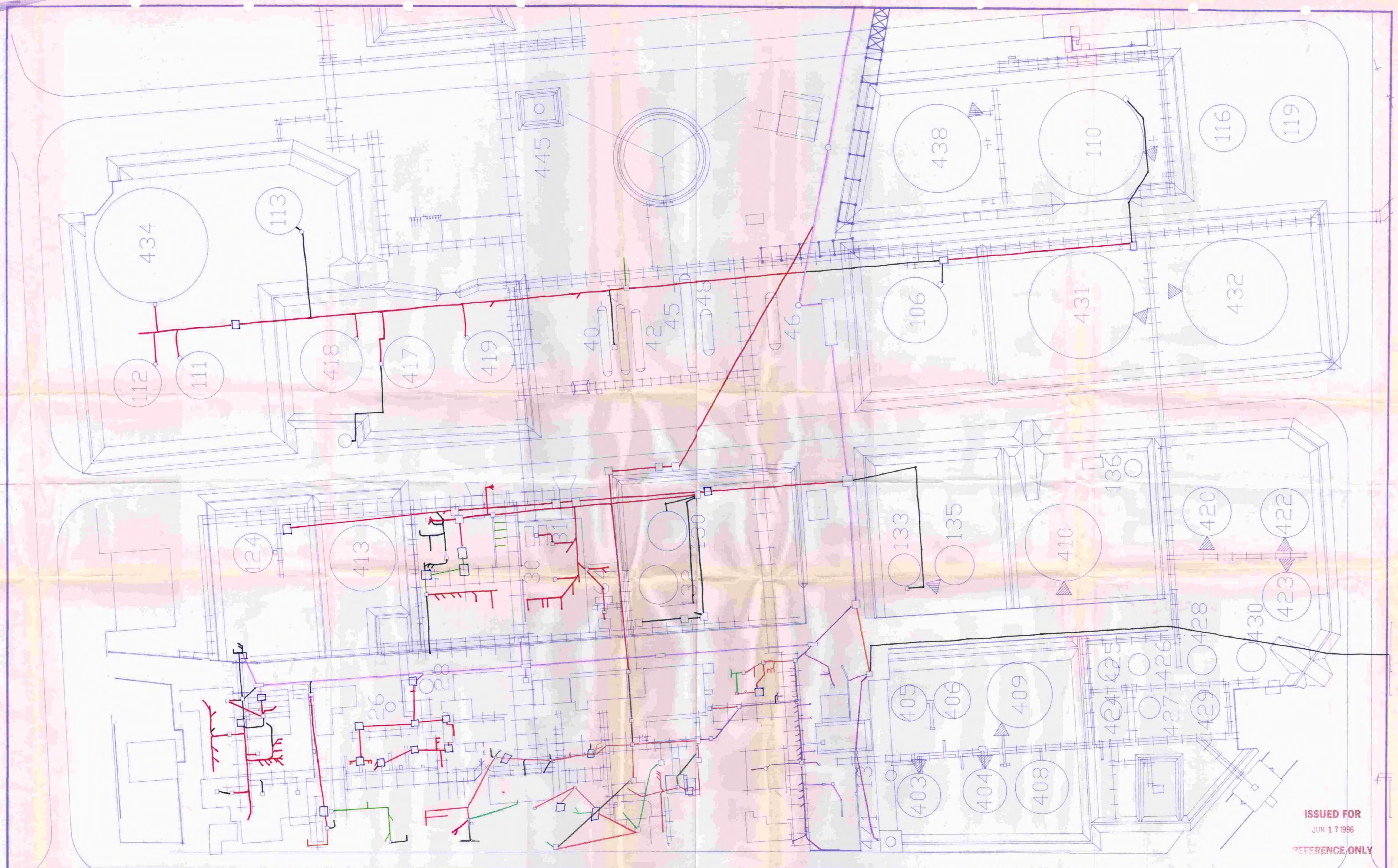
NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.	NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR.	NO.
1	No Leaks													
2	Leaks													
3	Stoppage													
4	Not in service/Not in existence													
5	Not tested underground tie-ins													
6	Newer lines													

NORTH PLANT -  
SEWERS OVER & UNDER  
25 YEARS OLD

**Navajo** REFINING COMPANY  
ENGINEERING DEPARTMENT  
ARTESIA, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	DATE	APPR'D BY	DRAWING NO.	REV.
GM			4-29-91		90-36-D-2	





ISSUED FOR  
JUN 17 1996  
REFERENCE ONLY

NOTES

REFERENCE DRAWINGS

NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR. NO.	REVISIONS	BY	CHK.	DATE	APPR.	APPR. NO.
1	LESS THAN 25 YRS.											
2	NOT IN SERVICE / NOT IN EXISTENCE											
3	NO LEAKS											
4	LEAKS											
5	NOT TESTED / CANNOT TEST											

DRAWING TITLE			
SOUTH PLANT - SEWERS OVER & UNDER 25 YEARS OLD			
DRAWN BY GM	CHK'D BY	SCALE	
DATE 4-29-91	APPR'D BY	DRAWING NO. 90-36-D-1	REV.

**Navajo** REFINING COMPANY  
ENGINEERING DEPARTMENT  
ARTESIA, NEW MEXICO



TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

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

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

June 19, 1996

RECEIVED

JUN 21 1996

Environmental Bureau  
Oil Conservation Division

Mr. Roger Anderson  
Oil Conservation Division  
Land Office Building  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

Dear Mr. Anderson:

Enclosed please find two copies of Navajo Refining Company's Discharge Plan Renewal. If after reviewing this document you need any further information or have questions, please contact me at 505-748-3311.

Sincerely,

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

DGG/te

Encl.

State of New Mexico  
Energy, Minerals and Natural Resources Department  
**OIL CONSERVATION DIVISION**  
P.O. Box 2088  
Santa Fe, NM 87501

RECEIVED  
JUN 21 1996  
Environmental Bureau  
Oil Conservation Division

**DISCHARGE PLAN APPLICATION FOR NATURAL GAS PROCESSING PLANTS,  
OIL REFINERIES AND GAS COMPRESSOR STATIONS**

*(Refer to OCD Guidelines for assistance in completing the application.)*

- I. TYPE: Oil Refinery
- II. OPERATOR: Navajo Refining Company  
ADDRESS: P.O. Box 159, Artesia, NM 88210  
CONTACT PERSON: David G. Griffin PHONE: 505-748-3311
- III. LOCATION: W /4 1/2 /4 Section 9 Township 17S Range 26 E  
Submit large scale topographic map showing exact location.
- IV. Attach the name and address of the landowner(s) of the disposal facility site.
- V. Attach description of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility.
- VI. Attach a description of sources, quantities and quality of effluent and waste solids.
- VII. Attach a description of current liquid and solid waste transfer and storage procedures.
- VIII. Attach a description of current liquid and solid waste disposal procedures.
- IX. Attach a routine inspection and maintenance plan to ensure permit compliance.
- X. Attach a contingency plan for reporting and clean-up of spills or releases.
- XI. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact fresh water. Depth to and quality of ground water must be included.
- XII. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XIII. CERTIFICATION

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: David G. Griffin

Title: Mgr. of ENV. Affairs for Water/Waste

Signature: David G. Griffin

Date: 6/19/96

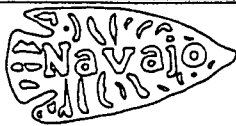
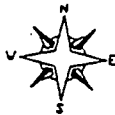
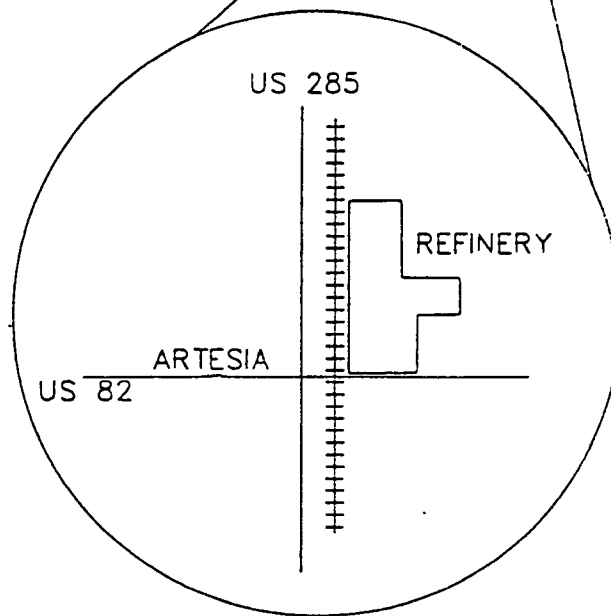
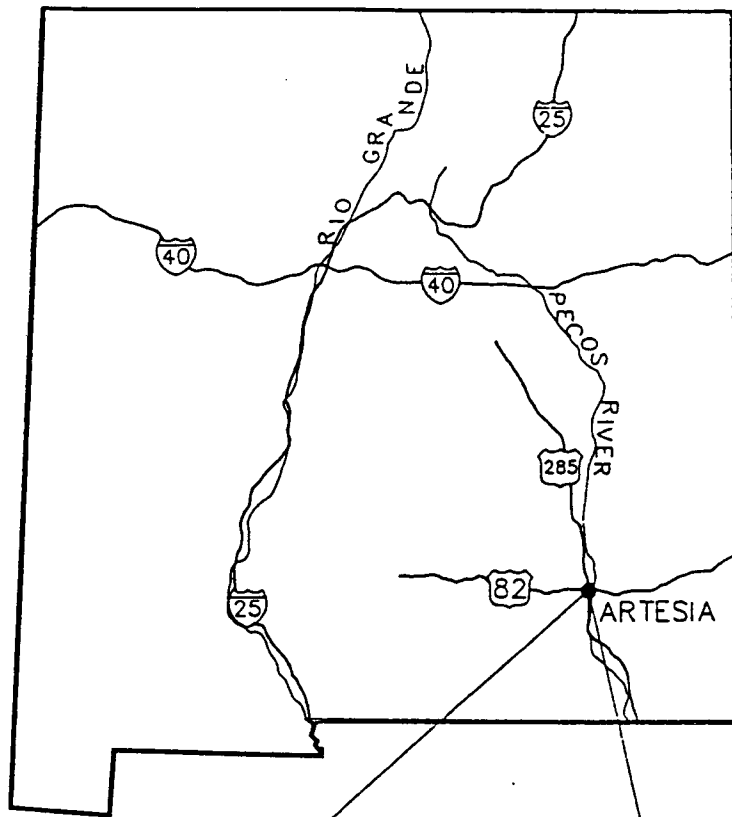
**DISTRIBUTION: Original and one copy to Santa Fe with one copy to appropriate Division District Office.**

**DISCHARGE PLAN APPLICATION**

**ATTACHMENT TO SECTION III**

**Facility Location Map**





Site location map.

**DISCHARGE PLAN APPLICATION**

**ATTACHMENT TO SECTION IV**

**Facility Owner Name and Address:**

Navajo Refining Company

501 East Main Street

Artesia, NM 88211

**DISCHARGE PLAN APPLICATION**

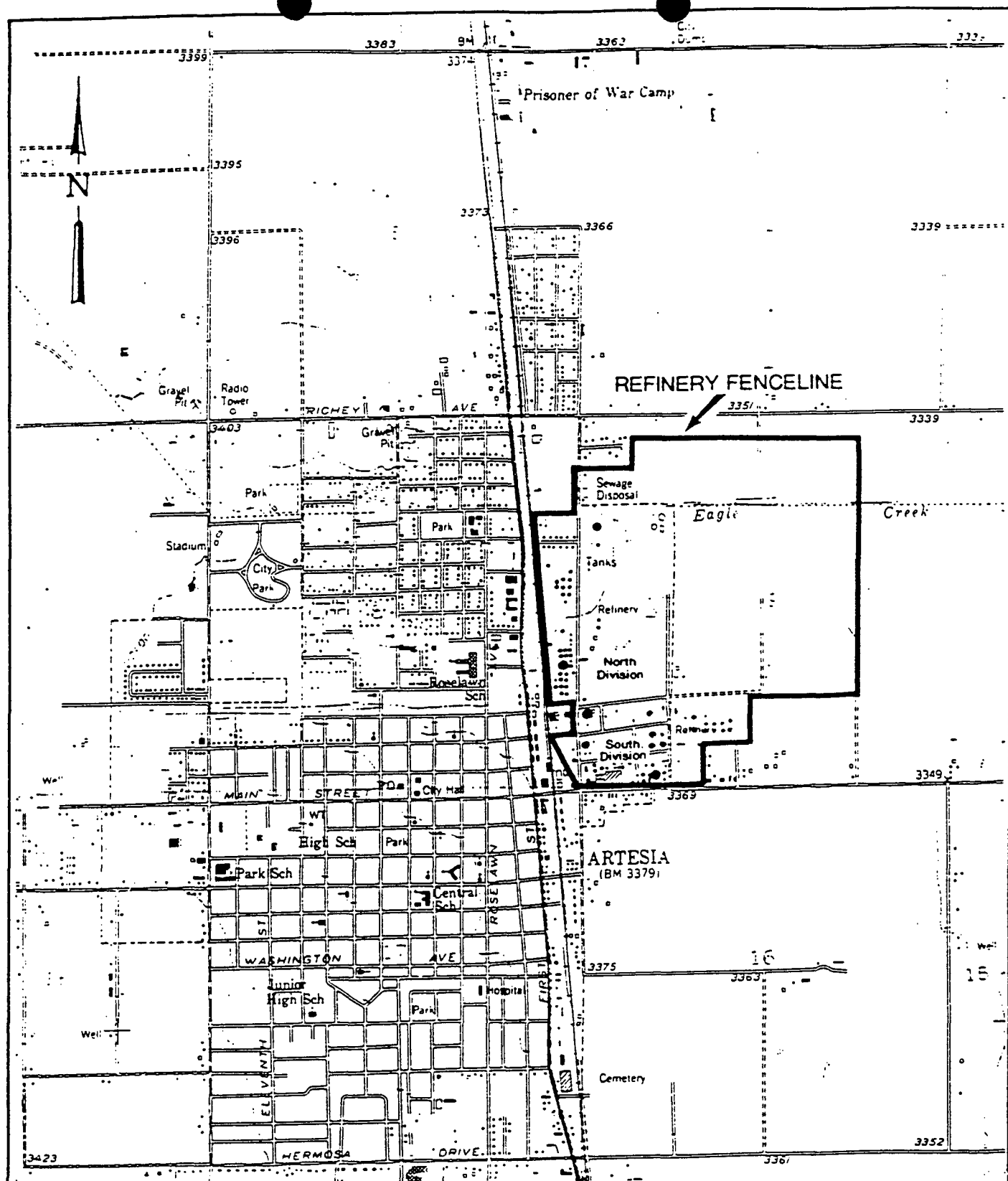
**ATTACHMENT TO SECTION V**

**Facility Description and Diagram**

## **Section V. Facility Description**

The Navajo Refinery - Artesia is located at 501 E. Main Street in Artesia, Eddy County, New Mexico. The ownership of the facility has changed several times since oil refining began on this site in the 1920's. Navajo bought the facility from Conoco in 1969 and has since expanded and modernized the facility into a refining complex handling 60,000 BPD of production (crude oil fractionation capacity at Artesia is 30,000 BPD, with the initial fractionation of the other 30,000 BPD occurring at Navajo's Lovington Refinery). The facility refines crude oil and produces gasoline, diesel fuel, JP-8, Jet-A, carbon black oil, asphalt, butane and propane.

The attached figures indicate the location of key facility areas, storage tanks, property boundaries and fence lines.



REFERENCE: U.S.C.S. MAP FOR ARTESIA, NEW MEXICO, 1955.  
PHOTOREVISED 1975.

NAVAJO REFINING  
COMPANY  
ARTESIA, NEW MEXICO

SITE VICINITY MAP

**DISCHARGE PLAN APPLICATION**

**ATTACHMENT TO SECTION VI**

**Sources, Quantities and Quality of Effluent and Waste Solids**

## Attachment VI. Sources, Quantities and Quality of Effluent and Waste Solids

Included among the primary refining processes downstream of crude fractionation at Navajo's Artesia Refinery are Fluidized Catalytic Cracking, Hydrodesulfurization, Reforming, Alkylation and Isomerization. Auxiliary activities associated with these processes are associated either with the separation of feedstock and product impurities or otherwise required for the operation and maintenance of the refinery. The units associated with these auxiliary activities include boilers, cooling towers, storage tanks, water purification facilities, desalting units, drying and sweetening units.

### Solid Waste Streams

The operation of the Refinery generates a variety of solid waste streams. The solid wastes consist of both Hazardous and Non-Hazardous wastes. Designated hazardous and nonhazardous wastes and their estimated annual generation quantities are presented in Tables VI-1 and VI-2, respectively.

Table VI-1. Summary of RCRA-listed hazardous wastes and estimated annual generation rates.

Hazardous Waste	Annual Generation Rates (approx.)
D004 - TCLP-Arsenic (spent pipeline filters)	40,000 lbs
K048 - DAF float	363,735 lbs
K049 - Slop Oil Emulsion solids	22,269 lbs
K050 - Heat Exchanger Bundle Cleaning Sludge	66,808 lbs
K051 - API Separator Sludge	259,810 lbs
F037 - Primary Oil/Water/Solids Separation Sludge	22,269 lbs
F038 - Secondary Oil/Water/Solids Separation Sludge	7,423 lbs

All generated hazardous wastes are disposed off-site at RCRA permitted facilities. Waste handling, temporary storage, transportation and disposal practices for these wastes are specified by the facility's federal RCRA permit, and essentially exclude the possibility of releases to groundwater. Consequently, detailed chemical characterizations of these hazardous wastes is not included herein.

The non-hazardous wastes consist of a broad variety of materials, such as contaminated soil, tower packing, spent absorbents and catalysts. These wastes are individually tested and approved by NMOCD prior to their disposal at the CRI facility located between Carlsbad and Hobbs. NMOCD

approval for the disposal of a number of nonhazardous wastes at the CRI facility is currently pending. Extensive chemical characterizations of the various nonhazardous wastes are found in their respective disposal permit applications, which were previously submitted to NMOCD.

Table VI-2. Summary of nonhazardous wastes and estimated annual generation rates

Nonhazardous Waste	Annual Generation Rates (approx.)
UOP R-34 spent catalyst (1)	25 yds
FCC Cat Fines	100 yds
Crude Sump Sludge	20 yds
asphalt	100 yds
diesel contaminated soil	50 yds
chloride guard	20 yds
activated carbon	20 yds
tank seals	5 yds
ceramic saddles and balls	20 yds
activated alumina	40 yds
Slop Oil-contaminated soil (June 29, 1995 spill)(1)	80 yds
calcium chloride	5 yds
Mole-Sieve proxvers from hydrodesulfization unit	20 yds
coked pall rings	40 yds
salt filter media	10 yds
crushed 55-gallon drums (1)	150 yds
Desalter Sludge (2)	25 yds
Tank 408 Bottoms (2)	20 yds
Crude Contaminated soil (1)	100 yds
Isomerization Unit soil (1,2)	200 yds
Caustic-contaminated soil	100 yds
HDS-20 Catalyst (2)	150 yds
HDS-95 Catalyst (2)	100 yds

(1) generated infrequently; approximate estimate

(2) NMOCD approval for offsite disposal currently pending

#### Effluent Water

The major effluent source generated by the refinery consists of treated wastewater discharged from the facility wastewater treatment plant. The wastewater system is comprised of the following four gathering systems:



- **North Division Process Units** - routed through the North Division API Separator (N-API)
  - Boiler Feedwater unit
  - Sulfur Recovery Unit
  - Amine Unit
  - Kerosene Hydrodesulfurization Unit
  - JP-8 HDS Unit
  - Powerformer (being converted to an Isomerization Unit)
  - Cooling Tower Y-4/5
  - Cooling Tower Y-6/7
  - Naphtha Hydrodesulfurization Unit
  - Fluid Catalytic Cracking (FCC) Unit
  - Various tank farm oily water drains/sumps
- **Modernization Units** - process water routed through the Alkylation Unit API Separator (Alky API)
  - Continuous Catalytic Regeneration Reformer (CCR) Unit
  - North Alkylation Unit
  - Diesel Hydrodesulfurization Unit
  - Cooling Tower Y-8

Note: stormwater runoff from the alkylation unit routes directly to tank T-801; stormwater runoff from other units route to wastewater treatment separator (WWT-API)

- **South Division Process Units** - routed through the South Division API Separator (S-API)
  - South Crude Unit
  - Flasher/Vacuum Unit
  - Boiler Feedwater Unit
  - MEROX/Merichem Treating Units
  - South Alkylation Unit
  - PBC Unit
  - Saturates Gas Unit
  - Cooling Tower Y-1, Cooling Tower Y-2
  - Various tank farm oily water drains/sumps
- **Recovery Well Network** (possible future treatment and reinjection to aquifer)
  - Navajo operates 14 hydrocarbon recovery wells in and around the refinery which generate recovered groundwater.

In all, there are four oil/water separators: N-API, S-API, WWT-API and the Alky API. As described above, N-API serves the North Division; S-API serves the South Division; WWT-API serves the

wastewater treatment plant; and the Alky API serves process wastewater from the North Plant Alkylation Unit, the Diesel HDS, and the CCR unit.

Wastewater from N-API and S-API flows through WWT-API and joins wastewater from the Alky API Unit downstream of WWT-API. From there, the common oil/water separator wastewater stream flows to the Wastewater Surge/Equilization Tank (T-801). T-801 is a cone (fixed roof) tank that is equipped with air blowers and an air distribution system (sparger) which acts to mix (i.e. equalize) the collected wastewater and keep any sludge suspended in the water.

After leaving T-801, the wastewater enters a flocculation tank where polymer is added to aid in coagulation of the hydrocarbons. Further wastewater treatment is provided downstream of the flocculation tank by a dissolved air floatation unit (DAF), which bubbles air through the water to recover additional entrained hydrocarbon solids. The treated water then passes through a trickling filter at the plant outfall and is finally discharged into the facility evaporation ponds.

Over the past five years, Navajo has been very active in water conservation, reuse and innovative treatment, with the goal of more efficiently using water and minimizing waste. The primary uses of water are cooling, steam production, desalting and general housekeeping. Conservation steps taken by Navajo include the maximum use of air-cooled heat exchangers (finfans) to reduce the cooling load carried by water circulating in cooling towers. The reuse of water also acts to conserve water by taking wastewater streams from various locations in the refinery and sending them to other services. In particular, all water used for desalting crude oil is supplied from secondary sources, including condensed waters from the crude fractionation system and stripped water off the sour water stripper. In the case of the sour water stripper, a significant portion of the stripped water is now pumped back to the FCC unit to be reused as high stage cooler wash water. After cycling through the high stage coolers, the water is sent back to the sour water stripper to be cleaned for another pass.

Most petroleum refiners have adopted similar procedures for reusing and recycling water. Navajo has taken water efficiency a step beyond reuse/recycling, by becoming the first refinery to ever pretreat all the water used by the refinery by reverse osmosis (RO). The RO units remove 90-95% of the total dissolved solids (TDS) from the water before sending it to service in the refinery. The RO units do produce a reject water stream (concentrate). This stream comprises 30 to 45% by volume of the raw well water feed to the RO units. The reject carries away naturally occurring dissolved minerals (primarily consisting of calcium salts) which are originally present in the source water. The TDS in the reject stream is three times greater than that found in the feed water. Even with this increase in TDS, the reject is readily usable

as irrigation water on farm land adjacent to the refinery, or it can be directly discharged to Eagle Draw. Once Navajo completes the planned changes to the process wastewater treatment and disposal system, the existing pipeline to the evaporation ponds will be converted to allow discharge of the RO reject directly into the Pecos River. Discharging directly to the river will give Navajo return flow credit for some of our water rights, as well as directly contribute towards New Mexico's water debt to Texas.

Feeding the purified water (permeate) into the refinery has had the following beneficial effects:

- a 65% reduction in process wastewater;
- dramatic reduction of water treatment chemical use - in some cases greater than 90% reduction;
- improved operations and reduced maintenance, due to much less scaling of water-cooled heat exchangers;
- 50% reduction in hazardous wastes generated by the wastewater treatment system;
- reduced fuel consumption due to drastic reduction in boiler blowdown;

The large reduction in process wastewater is primarily attributed to elimination of cooling tower blowdown and the near elimination of boiler blowdown. Since blowdown carries chemically treated water to the sewer system, eliminating or drastically reducing blowdown volume results in a reduction in chemical consumption. In the case of boilers, blowdown also carries energy in the form of hot water to the sewers. Reduction in boiler blowdown reduces energy loss, therefore reducing fuel consumption.

Improved operations and reduced maintenance comes from better quality water circulating in the cooling towers. Better quality water reduces the formation of scale on heat exchangers. Once heat exchangers become scaled up, heat transfer efficiency is lost, resulting in poor performance and additional maintenance to remove scale buildup.

The most significant benefit provided by the installation of the RO system is the reduction in hazardous waste generated by the wastewater treatment system. Study of the wastewater treatment system revealed the formation of significant quantities of precipitate in the process sewer when certain effluent streams came into contact with each other. Any solids formed in the sewer contributes to the formation of sludges such as API separator sludge and DAF Float. Both of these sludges, plus any other solids or sludges removed from process sewer system are listed hazardous wastes subject to treatment, storage and disposal under RCRA regulations.

A major source of the precipitate forming in the sewers occurred when calcium-saturated cooling tower blowdown was mixed with high pH boiler blowdown (due to alkalinity breakdown in the boilers). High pH associated with boiler blowdown causes precipitation of calcium salts in cooling tower blowdown. Elimination of cooling tower blowdown and drastic reduction in boiler blowdown has eliminated the

calcium precipitation, resulting in an estimated 50% overall reduction in hazardous waste generation in downstream treatment units.

The remaining process effluent flow has been reduced to desalter effluent, tank draw water and utility wash water. In addition, water produced by Navajo's oil recovery wells is combined with the process effluent streams. These streams, along with any stormwater runoff from process units, comprise the charge to the wastewater treatment plant.

Navajo has successfully reduced the volume of process effluent from the range of 0.9-1.3 MGD to present volumes in the range of 0.3-0.4 MGD (200-300 gpm). The present average effluent volume of 250 gpm is composed of approximately 200 gpm actual refinery effluent combined with approximately 50 gpm of oil recovery well water. There are some seasonal fluctuations in flow, which includes freeze protection water in winter and increased flow from summer time and turn-around maintenance activities. These fluctuations can increase the flow by as much as 0.1 MGD (70 gpm).

The greatest fluctuation in flow is caused by storm events. Stormwater runoff can reach up to 2,500 gpm, depending on the severity and duration of the storm. Fortunately, storm events are generally short in duration and occur sporadically. Navajo has taken storm surge into account in sizing the pump and tanks in the wastewater treatment system.

The other effluent flow is the Reverse Osmosis (RO) reject, described earlier in this section. Navajo's RO units are capable of charging 1100 gpm raw water feed. The average reject will be about 33% of the feed, therefore reject volume can be up to 400 gpm with an average of 300 gpm.

In August, 1994, NMOCD approved a discharge plan modification that would allow Navajo to separately treat and reinject recovered water collected from the oil recovery wells. At this time, Navajo has elected not to proceed with this separate treatment and reinjection. A suitable reinjection location has not yet been identified, and Navajo also has reservations concerning the costs associated with the duplication of wastewater treatment systems which would be required to separately handle this effluent.

- **Effluent Water Quality**

Navajo's current waste water treatment system is generating an effluent water acceptable for disposal in our evaporation pond system. A typical analysis of the treated effluent is shown in Table VI-3. Also illustrated in Table VI-3 is the analysis of the treated effluent as it is expected to look after modification of the treatment system.

Table VI-3. Typical Treated Effluent Quality

Constituent	Current Effluent	After Modification
Total Dissolved Solids, mg/l	2300	2300
Electrical Conductivity, umhos/l	5000	5000
pH	9.0	6-9
Chloride, mg/l	500	500
Fluoride, mg/l	96.6	0.1
Cyanide, mg/l	0.07	0.07
Aluminum, mg/l2.3	2.3	2.3
Arsenic, mg/l	0.4	0.4
Boron, mg/l	1.7	1.7
Barium, mg/l	0.4	0.4
Iron, mg/l	2.2	2.2
Magnesium, mg/l	51.5	51.5
Manganese, mg/l	0.1	0.1
Selenium, mg/l	BDL	BDL
Silver, mg/l	BDL	BDL
Zinc, mg/l	0.23	0.23
Lead, mg/l	BDL	BDL
Mercury, mg/l	BDL	BDL
Calcium, mg/l	60	60+
Cadmium, mg/l	BDL	BDL
Nickel, mg/l	0.17	0.17
Chromium, mg/l	BDL	BDL
Total Organic Carbon, mg/l	200	40
Benzene, mg/l	0.27	0.01
Toluene, mg/l	0.92	0.18
Ethyl Benzene, mg/l	0.38	0.08
Total Xylenes, mg/l	1.01	0.20
Naphthalene, mg/l	0.38	0.08
Phenol, mg/l	26.5	13.2
Cresols, mg/l	2.0	0.4
Total Suspended Solids, mg/l	270	9

Comparison of the current versus after modification shows a dramatic reduction in fluoride due to the precipitation process. The solvent extraction step is expected to significantly reduce the hydrocarbon content, including TOC, BTEX, Naphthalene, Phenols and Cresols. The filters added will reduce the TSS leaving the system and will be sized so that only tiny particles ( $< 5$  microns) will be left in the effluent thus protecting the injection formation.

The wastewater will be in compliance with the requirements for injection into a Class I - Nonhazardous Injection well. Quality control testing will be done routinely to verify compliance or alert the operators to an upset. Any indications of the effluent being off spec will result in the halting of injection and the reprocessing of the off-spec flow.

**DISCHARGE PLAN APPLICATION**

**ATTACHMENT TO SECTION VII**

**Liquid and Solid Waste Transfer and Storage Procedures**

## **Attachment VII. Liquid and Solid Waste Transfer and Storage Procedures**

### **Solid Waste**

Navajo maintains eight water-tight, 20-cubic yard rolloff bins at various refinery locations for temporary storage of hazardous and nonhazardous solid wastes. The rolloffs are clearly labeled as either hazardous or nonhazardous.

The vast majority of generated hazardous wastes are sludges derived from the sewer and waste treatment system. Several of these sludges, including K-051 (API Separator Sludge), F037 (Primary Separation Sludge) and F038 (Secondary Separation Sludge) are removed from the sewer system by vacuum truck and transported to a waste processing operation located at the wastewater treatment plant. This processing operation is owned and operated by Scaltech, Inc. Under RCRA regulations, the Scaltech operation is considered to be a part of the wastewater treatment system, and therefore does not require a RCRA treatment permit. Other sludges generated by the wastewater treatment system are pumped directly to Scaltech.

Scaltech processes the sludges to remove most of the water, thus producing a hazardous waste fuel that is transported by truck or railcar to RCRA-permitted cement kilns located in Texas, Missouri and Mississippi. Scaltech only maintains sufficient inventory to load out a truck or railcar as necessary. All hazardous waste fuel is stored in Scaltech's tanks, which are located on a secondary containment pad at the wastewater treatment plant.

Those nonhazardous wastes for which NMOCD disposal permits have been approved are shipped to the CRI facility for disposal. Pending their disposal approval, rolloff bins containing nonhazardous wastes for which the appropriate NMOCD permits have not been obtained are held and segregated from other disposal-approved wastes.

The facility also maintains a nonhazardous waste storage pad, most typically used for temporary storage of various high-water content waste materials. The unit consists of an approximately 70 by 70 feet, curbed concrete pad, and possesses a sump box and drain connected to the process sewer. The storage pad is located within the refinery approximately 500 feet north of the corner of Freeman and Moseley Streets.



### Effluent Water Transfer and Disposal

Liquid wastes associated with the various refinery processes are collected in the refinery's process sewer system where they flow to the waste water treatment plant. Navajo's present discharge permit calls for the integrity testing of all sewers in the refinery 25 years old or older. The facility sewer testing and replacement program is presented in Section XII of this Discharge Application document.

**ATTACHMENT TO SECTION VIII**

**Liquid and Solid Waste Disposal Procedures**

## **Attachment VIII. Liquid and Solid Waste Disposal Procedures**

### Solid Wastes

As previously described in Section VII, some hazardous and nonhazardous solid wastes segregated in designated rolloff bins are periodically shipped to approved disposal facilities. The fuel produced by Scaltech meets all RCRA standards for hazardous waste fuel and is readily acceptable to cement kilns permitted to burn it. In the cement kiln, the hydrocarbon portion of the fuel provides considerable heat of combustion (approximately 10,000 BTU's/lb), while the solids in the fuel become incorporated in the cement. The nature of Navajo's solids in the fuel is very compatible with the cement, since they are rich in alumina and silica.

### Effluent Water

As described in Section VI, the treated wastewater is discharged by pipeline to an evaporation pond system on Navajo property adjacent to the Pecos River. Navajo will make a major modification to both the wastewater treatment system and the method of final disposal of the treated water within the next 8 to 24 months (depending on permitting time). Navajo has elected to replace the ponds with nonhazardous Class I injection wells. In order to guarantee that the treated effluent is nonhazardous and free of any contaminants that could damage the wells, Navajo intends to modify the wastewater treatment system. Basically, the modification consists of the addition of another hydrocarbon removal unit, several new storage tanks, and a final particulate filter (see enclosed block flow diagram). Since the proposed injection wells are located 18 miles from the refinery, a set of substantial pumps (to be located at the wastewater treatment plant) will be necessary to get the effluent out to, and then down, the wells.

A new fluoride precipitation unit is being added to the North Alkylation Unit, which will reduce fluoride concentration in the effluent water.

Navajo is adding additional hydrocarbon removal capacity to deal with occasional benzene excursions which have in the past resulted in exceedances of the TCLP limit of 500 ppb. This additional treatment step consists of a liquid-liquid solvent extraction unit. The unit uses kerosene as a solvent to remove the majority of the dissolved hydrocarbons in the wastewater. Navajo has been running a pilot unit and the results are quite good. Testing has so far revealed that no matter high the incoming benzene concentration in the water, the solvent removes all of it down to an equilibrium concentration of 200 ppb.

After the solvent extraction step, the waste will be subject to air stripping in tankage, such that typical benzene concentrations in the treated effluent will be less than 10 ppb.

The primary role of one of the new storage tanks (relocated T-809) will be to provide residence time near the end of the treatment sequence, at which point quality control analysis can be done. This will ensure that if off-spec water did manage to get through the system, it can be sent back to the front end for further treatment. The other new tank will be piped up so that it can be used as a spare to the existing tank (T-801), when T-801 has to be taken out of service for inspection or maintenance. Because this new tank will be used in this service, it is being outfitted with an air distribution sparger and connected to the air blowers currently used on T-801. This tank will be piped up so it can be routinely switched from being in parallel, to being in sequence, with T-801, depending on storm surges or the need for longer residence time for air stripping in the tanks.

The new fluoride precipitation unit is designed to deal with soluble fluorides produced when hydrofluoric acid is neutralized with sodium hydroxide. The hydrofluoric acid, which is the catalyst in the Alkylation Unit, comes from the safety relief system and from the bottom of the regeneration column. Once these sources of acid are neutralized, the fluorides will be contacted with calcium in the form of a calcium chloride solution. The result will be the precipitation of calcium fluoride, leaving sodium chloride dissolved in the effluent water leaving the precipitator. The calcium fluoride is nonhazardous and may be shipped to the hydrofluoric acid manufacturer as feedstock, or to other industrial users of calcium fluoride.

The last of the new equipment added will be a set of filters designed to remove any particulates that could potentially plug the geologic formation into which the effluent will be injected. The filter will be located downstream of the new injection well pumps so that there is sufficient pressure to flow through the filters. The present design then has the treated effluent flow leaving the filters for the 18 mile transit to the injection field.

Under separate permit application, Navajo will be applying for Class I - non-hazardous permit status for 2 to 3 injection wells. These wells are located approximately 18 miles east of the refinery and will require the installation of a pipeline system to convey the treated water to the wells. In addition to the Class I injection wells, Navajo will make this treated water available to oil producers for purposes of water flood injection. The use of treated wastewater for flood injection should displace the use of better quality water (drinking quality water) currently used for this service, thereby constituting a beneficial reuse of refinery wastewater.

Based on the considerations discussed above, Navajo proposes to continue to operate the wastewater Ponds until final closure on an interim basis as per current NMOCD permit requirements, which includes the groundwater monitoring program now in place. Prior to closure, future groundwater monitoring requirements will then be negotiated with other state and/or federal agencies.

**ATTACHMENT TO SECTION IX**

**Routine Inspection and Maintenance Plan**

## **Attachment IX. Routine Inspection and Maintenance Plan**

Navajo maintains routine inspection maintenance programs in order to prevent inadvertent discharges of product, wastes or wastewater to the environment. Inspection activities are designed to report evidence of environmental releases and prevent the development of any conditions which might potentially result in such a release. The refinery is divided into the following operational units for purposes of monitoring and inspection:

Trucking Division  
North Plant Tank Farm and CBO Rack  
South Division  
FCC and Wastewater  
North Plant Utilities  
South Plant Utilities  
Blender Tank Farm  
South Side Miscellaneous Tank Farm  
South Plant West Tank Farm  
South Plant Heavy Oils  
CCR and Alky Unit  
Warehouses  
North Division

While specific items subject to inspection vary from unit to unit, the following observational criteria are generally included in the inspection program:

- condition of fittings, pumps, pump seals, valves, piping, hoses, drip pans;
- indication of tank leakage or damage to tank foundations;
- sump contents and fill levels;
- placement of drums within secondary containment areas;
- evidence of drum leakage or damage;
- damage to dikes, curbs and other secondary containment structures; and
- evidence of sewer lines backing up due to clogging.

On a monthly basis, designated supervisors/responsible individuals for the units prepare formal inspection reports. The reports are submitted to Navajo Environmental Affairs staff, who compile and maintain permanent copies of the reports.

All process areas within the facility are situated on concrete pads surrounded by continuous curbs. Runoff is directed to the process sewer and thence to the wastewater treatment plant. Precipitation runoff from non-process areas of the refinery is channeled to the facility stormwater

retention basin, which is located immediately south of Eagle Draw where it crosses East Fifth Street (see the Figure Attachment to Section V of this permit application). Prior to any intentional release of retained runoff from the retention basin, Navajo will conduct analytical sampling of those waters in accordance with the Section 313 priority chemicals listed in the Emergency Planning and Community Right to Know Act (EPCRA), and which are also presented in the facility NPDES Storm Water Pollution Prevention Plan (SWPPP).



**ATTACHMENT TO SECTION X**

**Release Contingency Plan**

## **Attachment IX. Release Contingency Plan**

In accordance with the federal Oil Pollution Act (OPA) and 40 CFR Part 112, Navajo has prepared both a Spill Prevention Control and Countermeasure Plan (SPCC) and Facility Response Plan (FRP). These plans assist facility personnel in preparation and response to discharges originating from the facility, and define organizational lines of responsibility, procedures for notification, activation and mobilization, and ensure compliance with applicable federal and state regulations.

The SPCC and FRP contain prioritized procedures for facility personnel to mitigate or prevent discharges of all potential chemicals of concern that could result from any of the following scenarios:

- equipment failure;
- tank overfill/failure;
- piping rupture/leak; and
- explosion and/or fire.

In addition, Section 2.2 of the Navajo FRP specifically details OCD spill notification requirements to be performed in accordance with Section 116 of OCD regulations. In the event of a "major" release, OCD will be notified as soon as possible after discovery of the event, either by telephone or in person at the OCD District Office ("immediate notification").

The requirement for immediate notification subsequent to a major release will be triggered when:

- a release of 25 or more barrels of crude oil or condensate (none of which reaches a water course) occurs; or
- a release of 1 or more barrels of crude oil or condensate reaches a watercourse or enters a stream or lake.

A written report ("subsequent notification") shall also be submitted in duplicate to the OCD District Office within 10 days of the release event. The relevant information will be submitted using a standard notification form, which will provide the following information:

- location of the incident (quarter-quarter, section, township range, and direction and location from nearest town or landmark);
- nature and quantity of the release;
- general prevailing conditions in the area of release;
- remedial actions taken and planned; and
- description of the area (soils, land use, proximity to watercourses, etc.).

Finally, subsequent notification (as described above) will also be provided to the OCD District Office in the event of any release of between 5 to 25 barrels of crude oil or condensate.

**ATTACHMENT TO SECTION XI**

**Geology, Hydrology and Groundwater Quality**

## **Attachment XI. Geology, Hydrology and Groundwater Quality**

Extensive characterizations of the geology, hydrology and groundwater quality in the vicinity of the refinery have been presented in numerous reports and documents, and are summarized in the following paragraphs.

### Geology

The Navajo Refinery is located in the broad Pecos River Valley. The plain on which the refinery lies slopes eastward at about 30 feet per mile. The geology of the Pecos River Valley is marked by a series of deep sedimentary Permian formations comprising the northwest shelf of the Permian Basin. Together, the various Permian geologic units can be as much as 2000 feet thick. In the vicinity of the refinery, the Permian formations are comprised (in descending order) of the Seven Rivers Formation, Queen Formation, Grayburg Formation, and San Andres Formation. The Seven River Formation is known to thin in the vicinity of the refinery, to the extent that its presence is somewhat questionable. In addition, two other Permian formations (Yates and Tansill) are apparently not found in the vicinity of the refinery.

The Permian units are overlain unconformably by Quaternary alluvium ("valley fill" deposits). The fill is comprised primarily of alluvial clays, silts, sands and gravels, is oriented north-south in the valley, and is typically found on the western side of the Pecos River in a band approximately 20 miles wide. The thickness of the valley fill varies from a thin veneer on the western margins of the valley to a maximum thickness of about 300 feet.

The mineralogy of the valley fill deposits can be divided into three units: an underlying quartzose unit, interbedded clay, and an uppermost carbonate gravel unit. The quartzose unit is generally less than 250 feet in thickness and consists primarily of fragmented quartz and igneous rock cemented by calcium carbonate. The clay unit is discontinuous in the fill deposits, occurring in isolated lenses and generally consisting of light to medium gray clays and silts which were originally deposited in localized ponds and lakes. The carbonate gravel unit is essentially uniform throughout the valley fill. It consists of coarse-grained carbonate gravel deposits along major drainage catchments that entered the Pecos River Valley, and then grading into inter-stream deposits of brown calcareous silts and thin beds of caliche.

Within the Carbonate Gravel Unit of the valley fill, two distinct terrace deposits are in turn recognized. The Lakewood terrace deposit, which consists of sandy silt interbedded with gravel, sand and some localized caliche, essentially comprises the current floodplain alluvial sediments along the

river. The Orchard Park terrace gently rises above the Lakewood to a thickness of about 15-20 feet in the vicinity of the refinery, and is comprised of silt interbedded with poorly sorted lenses of gravel in a silt and sand matrix. However, numerous shallow borings completed east of the refinery also reveal the presence of extensive clay zones. Agricultural land at Artesia is part of the Orchard Park terrace.

### Hydrology

In the vicinity of Artesia, the regional hydrological unit is generally designated as the Roswell Groundwater Basin. The basin consists of an eastward-dipping carbonate aquifer overlain (in the eastern part) by a semiconfining bed which is in turn overlain by a shallow aquifer. The carbonate aquifer is represented as an artesian formation (the "deep" aquifer) in close association with the San Andres Limestone. The deep aquifer generally consists of one or more water producing zones of variable permeability. Beneath the refinery, the depth to the top of the producing interval within the deep aquifer is approximately 670 feet, and the aquifer thickness is about 440 feet.

Some groundwater pumpage is reportedly achieved from fractures and secondary porosity in the Queen and Grayburg formations which overly the San Andres. However, the Queen, Grayburg and overlying Seven Rivers formation are generally considered as confining beds.

### Groundwater

Within the valley fill ("shallow" aquifer), the deep quartzose unit is generally considered to be the primary groundwater production zone. Wells completed within the valley fill have generally tapped from one to five discrete water-bearing zones. The thickness of these zones can be as much as 170 feet, but are most typically less than 20 feet. The general direction of groundwater flow in the valley fill is easterly towards the Pecos River, then southward and subparallel to the river.

In much of the area of the refinery, borings in the shallow Orchard Park terrace deposits have revealed the presence of an upper water-bearing zone, typically encountered between 10-20 feet. This zone consists of fine to coarse-grained saturated materials. Although groundwater quality in this "near-surface saturated zone" is, on balance, often poor, total dissolved solids concentrations are generally less than 10,000 ppm. However, background quality groundwater samples obtained from this zone have been reported to exceeds State of New Mexico Water Quality Control Commission standards for one or more naturally-occurring constituents. In particular, uncontaminated near surface groundwater in areas east of

the refinery in the vicinity of the evaporation ponds is essentially nonpotable, due to poor water quality characteristics associated with highly elevated levels of chlorides, sulfates, magnesium, sodium and fluorides.

It is this "near-surface saturated zone" which has predominantly experienced environmental impacts resulting from the release of contaminants associated with historical refinery operations. Navajo currently conducts a groundwater remediation program designed to address hydrocarbon contamination in this near surface zone. Under OCD oversight, Navajo operates a network of 14 product recovery wells both in and downgradient of the refinery. The remediation program entails requirements for routine reporting to OCD, including submittal of: analytical results for water samples collected from monitoring, irrigation and domestic wells; development of maps showing groundwater potentiometric lines and product thickness; and estimates of recovered product and groundwater volumes.

**ATTACHMENT TO SECTION XII**

**Additional Information**

## **Attachment XII. Additional Information**

### Process Sewer Integrity Testing and Replacement Program

Navajo's present discharge permit calls for the integrity testing of all sewers in the refinery 25 years old or older. Navajo has identified the sewers required to be tested and has done the leak testing on those sewers that could be isolated for testing. Various sections of the sewers tested did not pass the test. Navajo is in the process of repairing, replacing, or plugging and abandoning those segments that failed.

Those sewers in the refinery which are 25 years or older are shown in three drawings included in this Attachment. The drawings include:

#### Drawing No.

90-36-D-1	South Plant Sewers over and under 25 years old
90-36-D-2	North Plant Sewers over and under 25 years old
90-36-D-3	Blender Tank Farm Sewers over and under 25 years old

The first 3 drawings show only those segments of the sewer system actually 25 years or older while the last 2 drawings show all the sewers, both new and old. A color coded legend is shown on the drawings that identify which lines have passed integrity testing (green) and which lines have failed (red).

Several small sections of old sewers are highlighted in orange. Due to the way these sewer sections were constructed, Navajo has been unable to test these segments. If further efforts fail to provide a way to perform the tests, Navajo will elect to replace these segments on the assumption that they could be leaking.

It was not unusual to find several areas with old sewers that have had the original process equipment associated with those sewers shutdown. In these cases, Navajo has elected to plug and abandon those sewer lines. Plugged and abandoned lines are indicated by a "cloud" drawn around them. Sewer lines colored yellow were found to already have been plugged. The plugged lines are generally associated with shutdown equipment and are shown in clouded areas.

The final color code is purple, which was used to indicate those sewer segments installed in the last 25 years.



Navajo has established a sequence and timeline for the execution and completion of the sewer renovation project. Integrity testing and line replacement activities were initiated at the refinery South Unit in 1995. Navajo currently projects that necessary replacement of all process unit-associated sections of sewer line located in the North Division will be completed no later than January, 1997. Integrity testing and line replacement work for line sections associated with process units in the South Division will subsequently be initiated in 1997 and be completed no later than January, 1998. Finally, Navajo anticipates that required testing and replacement of remaining lines associated with facility tank farms and other miscellaneous areas will be completed by January, 1999.

#### Underground Hydrocarbon Pipeline Testing Program

Navajo currently conducts a testing program to evaluate the integrity of facility underground pipelines that carry hydrocarbon materials (either product or process intermediates). The testing program is overseen by the refinery Maintenance Department, and entails the routine testing of a pipeline inventory originally identified by Navajo and submitted to OCD in a March 31, 1988 correspondence to the agency.

Since the submittal of that original inventory, Navajo has undertaken a program to eliminate the use of such underground hydrocarbon lines whenever feasible. The original pipeline inventory compiled in 1988 listed 87 lines. At the time of preparation for this document, all but 17 of those lines had been removed. No leaks has been reported in the remaining lines subject to the routine testing. Table XII-1 presents the list of remaining pipelines and their last date of testing.

Table XII-1. Current list of underground hydrocarbon lines remaining from original 1988 inventory.

Previous Master List # (1)	Description	Date Last Tested
North Division		
2	6" sour crude line N of Holly Energy yard, W of 835 Tk, above ground in 3 places	7/13/92
4	Crude tank unloading line W of Tk 835 on Freeman, 3" from meter to manifold S of meter	7/13/91
5	CBO/heavy oil loading line, 3" underground E of truck rack, W comes up at railroad loading spur (50')	2/21/96
6	interplant transfer line, 4" underground N of 11 Tk and above at N water treater (70')	9/9/94
7	12" diesel booster pump suction from Tk 837 and 838 to pump N of Tk 63	10/29/91
8	diesel booster pump from 837 and 838 discharge, 6" across Freeman, NE of Tk 63 to pump N of 63	12/6/95
South Division		
13	blender rundown line to 111 Tk and 112 Tk, 6" under firewall E of 111 Tk (20')	2/12/92
14	Pipeline suction to booster pump at Tk 111, 6" diesel under firewall just E. of Tk 111	10/29/91
16	Jet A suction line from Tk 419, 12" to 8" product booster line station (80')	12/4/91
17	No-lead suction at Tk 106 to outside of firewall, 12" (20')	2/12/92
19	Sour crude delivery line, 6" from meters at Tk 115 to outside firewall E of 437 Tk	2/8/96
20	Crude truck unloading line, 4" from meter outside of firewall to connection inside firewall on 6" at Tk 437	7/13/92

(1) 1988 Master list prepared by Zeke Sherman, Navajo Refining

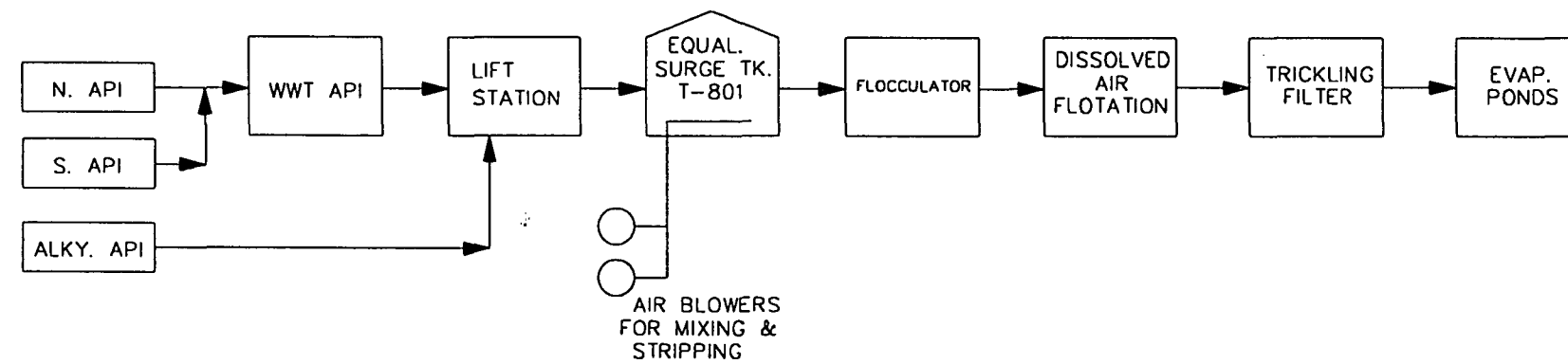
Table XII-1 (cont). Current list of underground hydrocarbon lines remaining from original 1988 inventory.

Previous Master List # (1)	Description	Date Last Tested
South Division		
29	4" cold gas oil charge line to FCC, under alleyway N of 432 Tk (75')	6/28/94
32	6" suction line from 411/412 Tk to filtering pump, W of 411 and suction to pipeline booster pump S of 115 Tk	2/12/92
34	8" new product pipeline to El Paso, crosses Truck By-Pass N of #2 warehouse, E across lease, N of 401/402 Tk	(2)
42	8" line to truck rack pump underground south of 419 Tk	2/12/92
49	4" pump discharge to 400 Tk and FCC under alleyway S of 438 Tk	6/28/94

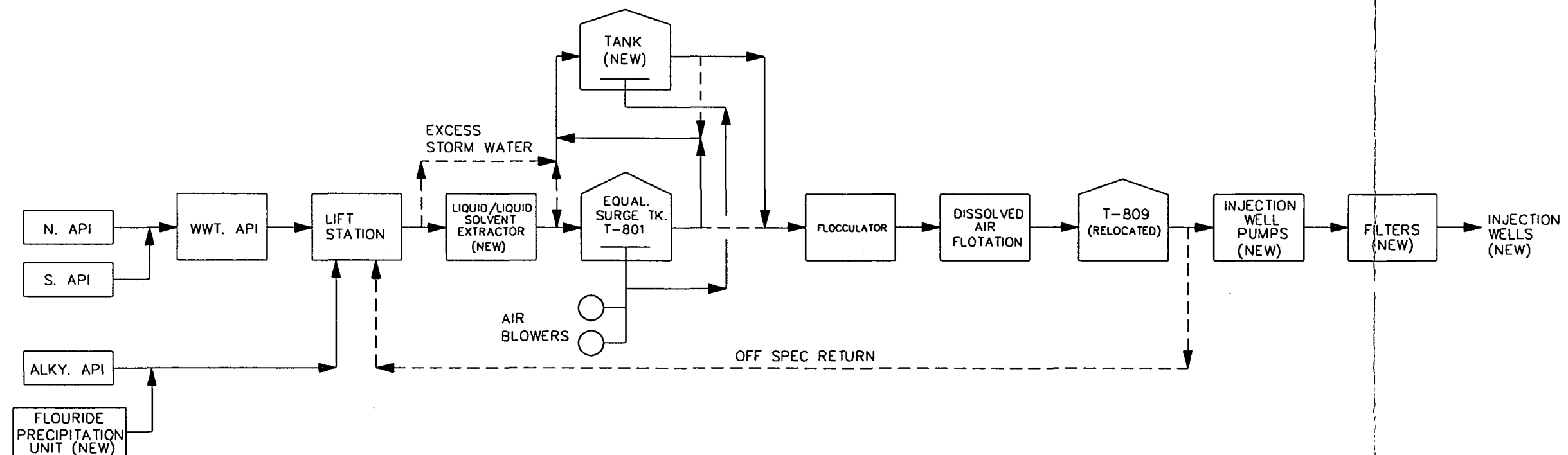
(1) 1988 Master list prepared by Zeke Sherman, Navajo Refining

(2) This interstate product line is subject to U.S. DOT regulations. Therefore, it is not included in the facility's routine pipeline testing program, but is instead periodically evaluated in accordance with DOT testing requirements (49 CFR 195).

# WASTE WATER TREATMENT BLOCK FLOW DIAGRAMS



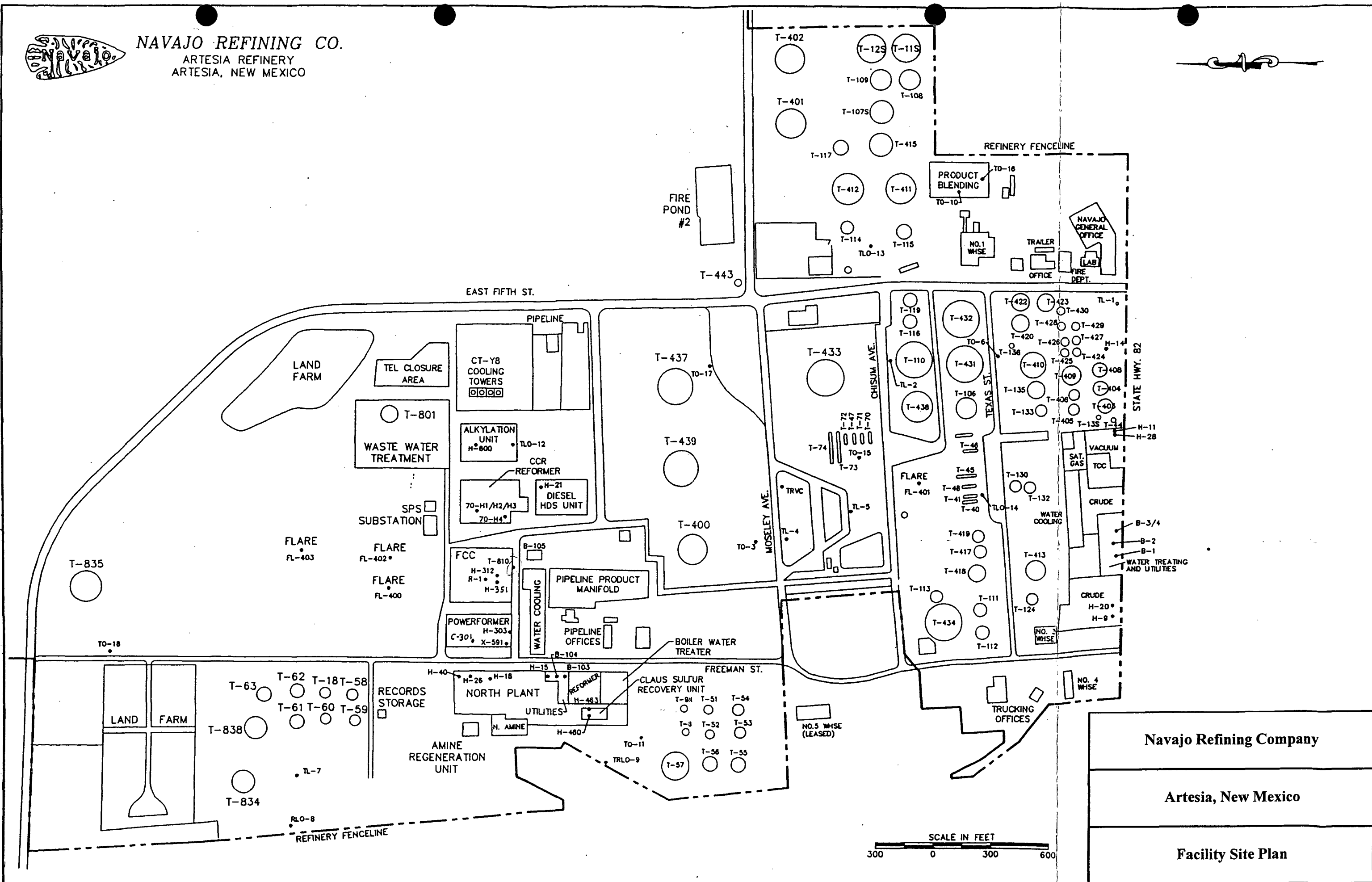
## 1. EXISTING SYSTEM



## 2. MODIFIED SYSTEM



NAVAJO REFINING CO.  
ARTESIA REFINERY  
ARTESIA, NEW MEXICO



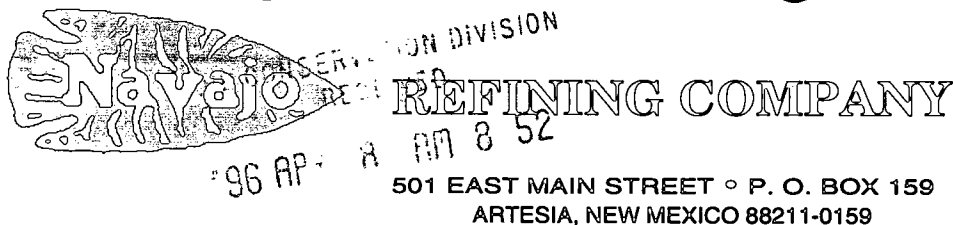
Navajo Refining Company

Artesia, New Mexico

Facility Site Plan

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

April 3, 1996

Mr. Bill Olson, Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

**RE: Quarterly Injection Report, Navajo Refining Company, Eddy Co., New Mexico**

Dear Bill,

Per our telephone conversation, Navajo would like to request sending one annual injection report that incorporates the four quarterly injection reports. This would save both Navajo and OCD some time in compiling and evaluating this data. Navajo understands that we will still test and measure the wells pertaining to these reports on a quarterly basis, but only report results on a yearly basis. Navajo requests that this report be due on the 28th of February of every year.

If there are any questions concerning this request, please call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,  
NAVAJO REFINING COMPANY

Darrell Moore  
Sr. Environmental Specialist



GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Hazardous & Radioactive Materials Bureau  
2044 Galisteo  
P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-1557  
Fax (505) 827-1544



MARK E. WEIDLER  
SECRETARY

EDGAR T. THORNTON, III  
DEPUTY SECRETARY

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

November 14, 1995

Mr. David G. Griffin  
Manager of Environmental Affairs  
for Water and Waste  
Navajo Refinery, Artesia  
P.O.B. 159  
Artesia, NM 88210

Dear Mr. Griffin,

**RE: Permitting status of air-stripping/reinjection unit at Navajo Refinery.**

The New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau (HRMB) is in receipt of the September 25, 1995 fax from Navajo Refining Company (Navajo). This fax represents an update to the August 25, 1995 letter from Navajo describing the captioned air-stripping/reinjection system (the system). The fax proposes two configurations in which the system may be configured to qualify for the wastewater treatment unit exemption from RCRA regulation found in 20 NMAC 4.1 (revised 11-1-95), which adopts 40 CFR §§ 264.1 (g) (6), and 260.10. One proposal would link the system to the existing evaporation ponds. However, as stated in HRMB's February 16, 1995 letter to Navajo, such a connection would seem to defeat the purpose of Navajo's goal of reducing wastewater volume. The second proposal put forward in the fax is a direct connection between the system and the City of Artesia Publicly Owned Treatment Works (POTW).

After an administrative review of the proposal, HRMB agrees that the connection to the POTW will qualify the air-stripping system for the wastewater treatment system exemption. Further, HRMB has been informed by Mr. Mark Ashley of the New Mexico Department of Energy, Minerals and Natural Resources Oil Conservation Division (OCD) that Navajo has modified their discharge permit (GW-28) to address reinjection of treated stripper effluent under Water Quality Control Commission regulations. This is as specified in the February 16, 1995 letter from HRMB to Navajo.

Mr. Griffin  
November 9, 1995  
Page 2 of 2

Please contact me or Michael Chacón at (505) 827-1561 if you have any questions or would like to discuss this matter further.

Sincerely,



Barbara Hoditschek, Permits Program Manager  
Hazardous and Radioactive Materials Bureau

cc: David Neleigh, EPA 6H-PN  
Benito J. Garcia, Chief, HRMB  
Bob Sweeney, RCRA TCP  
Mark Ashley, OCD  
File-Reading and Red 95



**DRAFT****CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

November 8, 1995

Mr. David G. Griffin  
Manager of Environmental Affairs  
for Water and Waste  
Navajo Refinery, Artesia  
P.O.B. 159  
Artesia, NM 88210

Dear Mr. Griffin,

**RE: Permitting status of air-stripping/reinjection unit at Navajo Refinery.**

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Mr. Griffin  
November 8, 1995  
Page 2 of 2

Please contact me or Michael Chacón at (505) 827-1561 if you have any questions or would like to discuss this matter further.

Sincerely,

Barbara Hoditschek, Permits Program Manager  
Hazardous and Radioactive Materials Bureau

cc: David Neleigh, EPA 6H-PN  
Benito J. Garcia, Chief, HRMB  
Bob Sweeney, RCRA TCP  
Mark Ashley, OCD  
File-Reading and Red 95

## ENVIRONMENT DEPARTMENT ROUTING SLIP

Post-It Fax Note	7671	Date	11-8-95	# of pages	3
To	Mark Ashley	From	Michael Chacón		
Co./Dept.	OCIO	Co.	HRMB		
Phone #	827-7133	Phone #	827-1564		
Fax #	827-8777	Fax #	827-1544		

or To: David Griffin, Navajo refinery

Signature By: Barbara Hoditschek

ed By: Michael J. Chacón Date: 11-7-95

ct: Permitting status or air stripper/reinjection system

Decision Needed By: ASAP Reason: To keep Navajo

ompliance.

ct for Information: Michael J. Chacón

W:

	Initial	Date Received	Date Approved
<u>Barbara Hoditschek</u> PROGRAM MANAGER	<u>BH</u>	<u>11/7</u>	<u>11/7</u> <i>see comments</i>
BUREAU CHIEF			
DISTRICT MANAGERS			
GRANTS			
ACCOUNTING			
BUDGETS			
LEGAL REVIEW			
ASD DIRECTOR			
WWM DIRECTOR			
EPD DIRECTOR			
DEPUTY SECRETARY			
SECRETARY			
COMMUN. DIRECTOR			
<u>MARK ASHCY, OCO</u> ADMIN. SECRETARY	<u>MA</u>	<u>11-8-95</u>	<u>11-8-95</u>
<u>Phillip Solano</u> OTHER	<u>PS</u>	<u>11-7-95</u>	<u>11-7-95</u>
<u>Coby Muckelroy</u> Prog Mgr Enforcement	<u>CM</u>	<u>11-8</u>	<u>11-8</u>

Comments by Drafter or Reviewer(s):

Coby Pls. take a look at this and see if you have  
any enforcement problems. Return to me when finished.  
Thanks BH

OIL CONSERVATION DIVISION

October 20, 1995

**CERTIFIED MAIL**

**RETURN RECEIPT NO. Z-765-962-781**

Mr. David Griffin  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88211-0159

**RE: Discharge Plan GW-028 Renewal  
Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Griffin:

On October 21, 1991, the groundwater discharge plan, GW-028, for the Artesia Refinery located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico, was approved by the Director of the New Mexico Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission (WQCC) regulations and was approved for a period of five years. The approval will expire on October 21, 1996.

If your facility continues to have potential or actual effluent or leachate discharges and you wish to continue operation, you must renew your discharge plan. The OCD is reviewing discharge plan submittals and renewals carefully and the review time can extend for several months. Please indicate whether you have made, or intend to make, any changes in your system, and if so, please include these modifications in your application for renewal.

To assist you in preparation of your application, I have enclosed an application form and a copy of the OCD's Guidelines for the Preparation of Ground Water Discharge Plans at Oil Refineries and a copy of the WQCC regulations. Please submit the original and one copy to the OCD Santa Fe Office and one copy to the OCD Artesia District Office. Note that the completed and signed application form must be submitted with your discharge plan renewal request.

Mr. David Griffin  
October 20, 1995  
Page 2

The discharge plan renewal application for the Artesia Refinery is subject to WQCC Regulation 3-114. Every billable facility submitting a discharge plan for renewal will be assessed a fee equal to the filing fee of \$50 plus a flat fee of \$3,910.00 for oil refineries.

The \$50 filing fee is to be submitted with the discharge plan renewal application and is nonrefundable. The flat fee for an approved discharge plan renewal may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

If you no longer have any actual or potential discharges and a discharge plan is not needed, please notify this office. If you have any questions, please do not hesitate to contact Mark Ashley at (505) 827-7155.

Sincerely,



Roger C. Anderson  
Environmental Bureau Chief

xc:    OCD Artesia Office

**NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT**  
**OIL CONSERVATION DIVISION**

August 2, 1995

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. Z-765-962-750**

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, New Mexico 88211-0159

**RE: RO Reject Water Sampling Schedule and Parameters**

Dear Mr. Moore:

The New Mexico Oil Conservation Division (OCD) has reviewed your request dated July 12, 1995 to modify your sampling schedule and parameters required for the RO reject water. Our review revealed several metals that were above the standards set forth. Also, the inconsistency of the data over time does not allow for an accurate decision as to the feasibility of any modifications at this time. Therefore, based upon the information provided in your request, the modification is denied. All required conditions contained in the April 27, 1993 modification approval continue to be in full force and must still be adhered to.

If you have any questions regarding this matter please feel free to contact Mark Ashley at (505) 827-7155.

Sincerely,



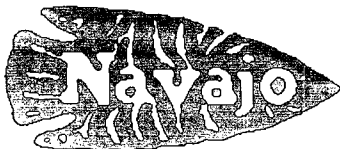
Roger C. Anderson  
Environmental Bureau Chief

RCA/mwa

xc: Tim Gum, OCD Artesia Office  
Ray Smith, OCD Artesia Office

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

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

April 11, 1995

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P/L

**RECEIVED**

**APR 19 1995**

**GROUND WATER BUREAU**

Ground Water Protection Bureau  
NMED  
P.O. Box 26110  
Santa Fe, NM 87502-6110

**Re: Phase II RCRA Facility Investigation (RFI), Three Mile Ditch and Evaporation Ponds, Navajo Refining Co.**

Dear Sir or Madam:

This letter is sent to inform you that Navajo Refining Co., Artesia, NM is continuing the process of investigating our Evaporation Ponds and the former Three Mile Ditch. As an interested party on the New Mexico Environmental Department's active mailing list, EPA has asked that we notify and send you quarterly progress reports on this RFI.

Starting January 9, 1995, Navajo drilled eleven new monitor wells and piezometers along the former Three Mile Ditch and in the area of the ponds. These wells were then sampled and split with EPA's representatives. In addition, some soil sampling along the Ditch was done to clear up a few questions and some sampling of the Pecos River was carried out while our contractor, Re/Spec, was here. These results will be incorporated into the next RCRA Facility Investigation Report.

Active remediation of the closed ponds continue with pond #1 being 75% complete and pond #2 about 60% complete. We have looked into ways to speed up the remediation process, but have not identified any practical ways yet. Our present process of excavating contaminated areas and spreading out the material for aeration and tilling is working well.

We are continuing to hold twice yearly public meetings to allow an open question and answer session from anyone who wishes to attend. These meetings started out being poorly attended, however, the last two meetings have brought out a very good cross-section of the population. We feel sure these numbers will continue to grow. The next meeting will most likely be held in late May or June with date and time to be posted prominently around Artesia and published in the Artesia Daily Press.

These reports will continue until the RFI process is completed. If you have any questions or comments concerning this matter, please contact me at (505) 748-3311.

Regards,

David G. Griffin  
Manager of Environmental Affairs

DGG/sj

TELEPHONE  
(505) 748-3311

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62905278



## REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159  
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March 2, 1995

Mr. Richard Powell  
New Mexico Environmental Dept.  
1190 St. Francis Dr.  
P.O. Box 26110  
Santa Fe, NM 87502

**RE: Storm Water Sampling Procedures at Navajo Refinery, Artesia, NM**

Dear Sir:

In your February 13, 1995 letter, you raised some interesting issues concerning Navajo's Storm Water monitoring program. We subsequently have had our consultant, Carter-Burgess, address these concerns and have enclosed a copy of their research findings.

We are required to collect samples that are representative of the monitored activity. We feel a sample is not representative if it includes discharges from other facilities or municipalities. As the Carter-Burgess letter and attachment indicate, the guidance manual allows for the use of a mass balance equation for facilities that have run-on from other properties. We regard this to be a viable option in this case.

If you still have concerns or questions, please feel free to call me at 505-748-3311. Thank you for your time in this matter.

Sincerely,

Darrell Moore  
Environmental Specialist

Encl.

cc: Cecilia Kernodle  
USEPA (6W-ET)  
1445 Ross Ave.  
Dallas, TX 75202-2733





# Carter & Burgess

Consultants in Engineering, Architecture,  
Planning and the Environment

## MEMO

TO: David Griffin  
FROM: Kathryn Robinson KR  
SUBJECT: NPDES Sampling Locations

DATE: February 24, 1995

PROJECT NO: 94164402F

Ken Davis indicated that he promised to send you additional information regarding the storm water monitoring program. It is my understanding that the information requested is related to the location of sample sites that are representative of the storm water discharges associated with a facility when upstream flow enters the facility boundary and commingles with facility storm water discharges prior to exiting the property. The following is a summary of research findings:

1. The USEPA General Permit for Storm Water Discharges Associated With Industrial Activities (Part VI. Monitoring and Reporting Requirements) provides a list of types of activities, monitoring frequencies and parameters for facilities subject to monitoring. Section 4 of the above Part also provides information regarding the sample type for storm water discharges.
2. 40 CFR 122.41 (j) (1) [Conditions applicable to all permits] states: *"Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity,"* (Attachment 1).
3. In Section 2.8 of the USEPA publication *NPDES Storm Water Sampling Guidance Document* (July 1992), general information is provided regarding Where to Sample Storm Water Discharges. Exhibit 2-12. Solutions To Sample Location Problems, states as a solution to run-on from other property that a facility should: *"if possible, estimate the volume of off-site run-on contributions and off-site run-on sources of pollutants to perform a mass balance calculation. If this estimation is not possible, provide a narrative discussion of the upstream site (e.g., is it developed, if so the type of facility, the types of pollutants that may be present on the site, etc.)"* (Attachment 2).

A facility that is required to sample storm water discharges must collect samples representative of the monitored activity. In this instance, the monitored activity is storm water discharges associated with industrial activity. A sample is not representative if it includes discharges from other facilities. The guidance manual allows for the use of a mass balance equation for facilities that have run-on from other property. The mass balance equation is a viable option under some circumstances.

KJR/kr  
94164402.M01

cc: Correspondence  
Ken Davis

## § 122.41

## 40 CFR Ch. I (7-1-94 Edition)

(3) Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

(b) *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

(c) *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(e) *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and

reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(g) *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) *Duty to provide information.* The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

(i) *Inspection and entry.* The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

(j) *Monitoring and records.* (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip

## Environmental Pro

chart recordings  
monitoring instruments  
reports required  
records of all data  
application for the  
of at least 3 years  
sample, measurement  
information. This periodic  
request of the Director

(3) Records of information shall include:  
(i) The date, exact sampling or measurement  
(ii) The individual performing the sampling or measurement  
(iii) The date(s) formed;

(iv) The individual performing the analyses;

(v) The analytical methods used; and

(vi) The results

(4) Monitoring conducted according to the approved under 40 CFR part 503, or other test procedures specified in 40 CFR part 503, or other test procedures specified in the permit.

(5) The Clean Water Act provides that any person who, with or without knowledge, violates any monitoring condition required to be maintained under this permit shall, upon conviction, be fined not more than \$20,000 or imprisoned not more than 5 years, or both. If the person is for a violation after a first conviction, the fine shall not be more than \$20,000, or by imprisonment not more than 4 years, or both.

(k) *Signatory requirements.* The permittee shall submit to the Director and certify (See

(2) The CWA provides that any person who knowingly makes a false statement, representation, or certification in any record or document submitted or required under this permit, or who knowingly falsifies or omits information in reports or records required to be submitted, shall be punished by a fine of \$10,000 per violation.



# NPDES Storm Water Sampling Guidance Document

ATTACHMENT 2



Printed on Recycled Paper



In addition to submitting quantitative data for the application, municipalities must also develop programs for future sampling activities that specify sampling locations, frequency, pollutants to be analyzed, and sampling equipment. Where necessary (as determined by the municipality or if required by the permitting authority), responsibilities may also include monitoring industries connected to the municipality's storm sewers for compliance with their facility-specific NPDES permits. Refer to EPA's Guidance Manual for the Preparation of Part 1 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems for information on how to develop municipal sampling programs.

### 2.7.7 USE OF HISTORICAL DATA

Data from storm water samples analyzed in the past can be submitted with applications in lieu of new sampling data if:

- All data requirements in Form 2F are met
- Sampling was performed no longer than 3 years prior to submission of the permit application
- All water quality data are representative of the present discharge.

The historical data may be unacceptable if there have been significant changes since the time of that storm event in production level, raw materials, processes, or final products. Significant changes which may also impact storm water runoff include construction or installation of treatment or sedimentation/erosion control devices, buildings, roadways, or parking lots. Applicants should assess any such changes to determine whether they altered storm water runoff since the time of the storm event chosen for use in the permit application. Historical data can be used only in applications. Historical data cannot be used for fulfilling permit requirements.

### 2.8 WHERE TO SAMPLE STORM WATER DISCHARGES

Storm water samples should be taken at a storm water point source. A "point source" is defined as any discernible, confined, and discrete conveyance, including (but not limited to) any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged (as per 40 CFR 122.2). Included in the definition of storm water "point

sources" is storm water from an industrial facility that enters, and is discharged through, a municipal separate storm sewer. In short, most storm water discharges can be defined as "point source" discharges, since they ultimately flow into some kind of conveyance (e.g., a channel or swale).

### 2.8.1 INDUSTRIAL FACILITIES

Industrial applicants submitting individual applications must collect and analyze a grab sample taken within the first 30 minutes of the storm event and flow-weighted composite samples from each of the industrial storm water "point source" outfalls identified on the site drainage map submitted for Section III of Form 2F. Applicants submitting quantitative data for Part 2 of the group application must also collect samples for each outfall discharging storm water associated with industrial activity. All outfalls should be sampled during the same representative storm event if possible. If this is not feasible, outfalls may be sampled during different representative storm events upon approval by the permitting authority. Descriptions of each storm event and which outfalls were sampled during each event must be included in the application. Storm water runoff from employee parking lots, administration buildings, and landscaped areas that is not mixed with storm water associated with industrial activity, or storm water discharges to municipal sanitary sewers, do not need to be sampled.

#### Outfalls With Substantially Identical Effluents—Industrial Facilities

If an applicant has two or more outfalls with "substantially identical effluents," the facility may petition the permitting authority to sample and analyze only one of the identical outfalls and submit the results as representative of the other. "Substantially identical effluents" are defined as discharges from drainage areas undergoing similar activities where the discharges are expected to be of similar quantity and quality, and indistinguishable in expected composition. Chapter 5 presents an example of a petition for substantially identical effluents and discusses this process in more detail.

### 2.8.2 MUNICIPALITIES

Large and medium municipalities are required to sample storm water discharges from 5 to 10 outfalls or field screening points that were proposed in Part 1 of the application. The final decision on the number and location of sampling points will be determined by the permitting authority and will

depend on site-specific conditions such as land use or drainage area and results of data collected during the field screening analysis process for Part 1 of the application.

### 2.8.3 LOGISTICS OF WHERE TO SAMPLE

The ideal sampling location would be the lowest point in the drainage area where a conveyance discharges storm water to waters of the U.S. or to a municipal separate storm sewer system. A sample point also should be easily accessible on foot in a location that will not cause hazardous sampling conditions. Ideally, the sampling site should be on the applicant's property or within the municipality's easement; if not, the field personnel should obtain permission from the owner of the property where the discharge outfall is located. Typical sampling locations may include the discharge at the end of a pipe, a ditch, or a channel.

However, logistical problems with sample locations may arise (e.g., nonpoint discharges, inaccessibility of discharge point, etc.). Logistical problems with sample locations and suggested solutions are described in Exhibit 2-12. In many cases, it may be necessary to locate a sampling point further upstream of the discharge point (e.g., in a manhole or inlet). If the storm water at a selected location is not representative of a facility's total runoff, the facility may have to sample at several locations to best characterize the total runoff from the site. In situations where discharge points are difficult to sample for various reasons, the applicant should take the best sample possible and explain the conditions in the application. A discussion on sampling at retention ponds appears in Section 3.1.2.

## 2.9 STAFFING CONSIDERATIONS

Staffing needs for sampling must be determined by the applicant. Factors in making the determination include the number of sample locations, the size of the area to be sampled, how far apart the locations are, the type of sampling required, the technique to be used, the number of samples to be taken (depending on how many parameters must be analyzed), and safety considerations.

Training sampling personnel is important to the success of storm water discharge characterization. Training can be done using this manual. Sampling conducted by untrained personnel may result in

**EXHIBIT 2-12. SOLUTIONS TO SAMPLE LOCATION PROBLEMS**

<b>Problem:</b>	Sampling where storm water commingles with process or non-process water
<b>Solution:</b>	Attempt to sample the storm water discharge before it mixes with the non-storm water discharge. If this is impossible, sample the discharge both during dry and wet weather and present both sets of data to the permitting authority. This will provide an indication of the contribution of pollutants from each source.
<b>Problem:</b>	Numerous small point discharges
<b>Solution:</b>	Impound channel or join together flow by building a weir or digging a ditch to collect discharge at a low point for sampling purposes. This artificial collection point should be lined with plastic to prevent infiltration and/or high levels of sediment. Or, sample at several locations to represent total site runoff.
<b>Problem:</b>	Inaccessible discharge point [examples include underwater discharges or unreachable discharges (e.g., out of a cliff)]
<b>Solution:</b>	Go up the pipe to sample (i.e., to the nearest manhole or inspection point). If these are not available, tap into the pipe or sample at several locations to best represent total site runoff.
<b>Problem:</b>	Managing multiple sampling sites to collect grab samples during the first 30 minutes (industrial facilities only)
<b>Solution:</b>	Have a sampling crew ready for mobilization when forecasts indicate that a representative storm will occur or sample several different representative events. Also, for most parameters, automatic samplers may be used to collect samples within the first 30 minutes triggered by the amount of rainfall, the depth of flow, flow volume or time.
<b>Problem:</b>	Commingling of parking lot runoff with discharge associated with industrial activity
<b>Solution:</b>	The combined runoff must be sampled at the discharge point as near as possible to the receiving water or the parking lot drain inlet if there is one.
<b>Problem:</b>	Sampling in manholes
<b>Solution:</b>	Sample in manholes only when necessary. See Chapter 6 for safety information. Sampling in manholes requires training on confined space entry.
<b>Problem:</b>	Runon from other property
<b>Solution:</b>	If possible, estimate the volume of offsite runon contributions and offsite runon sources of pollutants to perform a mass balance calculation. Include this information in the permit application. If this estimation is not possible, provide a narrative discussion of the upstream site (e.g., is it developed, if so the type of facility, the types of pollutants that may be present on the site, etc.).



BRUCE KING  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2850

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 30, 1994

Mr. Jack Reid, President  
Navajo Refining Company  
501 East Main Street  
P.O. Drawer 159  
Artesia, NM 88211-0159

**RECEIVED**  
JAN 05 1994

NAVAJO REFINING CO.

**RE: Notice of Deficiency, Draft RFI Report, North Colony Landfarm,  
Navajo Refining Company, Artesia, New Mexico**

Dear Mr. Reid:

The Hazardous and Radioactive Materials Bureau (HRMB), New Mexico Environment Department (NMED), has reviewed the July 1994 Draft RFI Report, "RCRA FACILITY INVESTIGATION, NORTH COLONY LANDFARM, NAVAJO REFINERY, ARTESIA, NEW MEXICO" and issues the attached comments for your consideration. In brief, HRMB finds the Draft RCRA Facility Investigation (RFI) Report deficient. Additionally, the data and interpretations presented do not verify that contaminants have not migrated from the North Colony Landfarm (NCL) to the uppermost aquifer. Therefore, a Phase II RFI Workplan to determine the nature, rate, and extent of contamination in both soil and groundwater is required for the NCL. The Phase II RFI Workplan should be sent to HRMB within forty five (45) days of your receipt of this letter. The Final RFI Report will be due 180 days after HRMB approves the Phase II RFI Workplan.

If you have any questions on the attached comments, please contact Bob Sweeney of my staff at (505) 827-4308.

Sincerely,

Ronald A. Kern  
RCRA Technical Compliance Program Manager  
Hazardous and Radioactive Materials Bureau

attachment: HRMB's comments on the July 1994 Draft RFI Report

cc: Phil Youngblood, Dir. of Env. Affairs, NRC  
David Neleigh, 6H-PN, EPA Region VI  
Garrison McCaslin, NMED, District IV  
Barbara Hoditschek, RCRA Permitting Program Manager, HRMB  
NAVA 1994 Red File  
RCRA TCP NRC File



**ATTACHMENT**

The following technical comments relate to the July 1994 Draft RFI Report for the NCL. Language in bold print enclosed within parentheses is quoted directly from the text of the draft report. HRMB's Technical Compliance Program's comments follow the quotes.

**GENERAL COMMENTS:**

The July 1994 Draft RFI Report is Task IV of the "RCRA CORRECTIVE ACTION PLAN", OSWER Directive 9902.3. The OSWER Directive is the guidance stipulated in Attachment G, item 4 of the Navajo Refining Company's (NRC) North Colony Landfarm Land Treatment Permit number NMD048918817-1. Task IV requires NRC to determine, among other things, the degree and extent of groundwater and soil contamination caused by releases of hazardous constituents from the NCL. After reviewing the RFI Report, HRMB:

1. understands that releases of hazardous constituents from the landfarm have contaminated soils and groundwater beneath the landfarm and
2. finds the extent of both soil and groundwater contamination has not yet been determined.

To accomplish a complete RFI, Task IV: Facility Investigation, of the OSWER Directive, must be addressed. The opening paragraph of Task IV requires NRC to "...conduct those investigations necessary to: characterize the facility...(and) define the degree and extent of contamination...".

To characterize the facility, it would be useful to have in the report a thorough description of the regional as well as facility-wide (or at least that part of NRC which is downgradient to the NCL) stratigraphy and hydrogeology, a depiction of seasonal changes in the groundwater flow regime, and geologic/hydrologic cross sections. Task IV, Part A, "Environmental Setting", is a comprehensive listing of the items needed for the facility characterization.

To define the degree and extent of contamination all information specified in Task IV, Part C, "Contamination Characterization" should be provided. Especially helpful would be horizontal and vertical profiles of contaminant concentration, in both soils and groundwater, as well as projections of expected migration.

Because NRC, with the July 1994 Draft RFI Report, has not

adequately defined the degree and extent of contamination in the uppermost aquifer due to leakage from the NCL, a Phase II RFI Workplan to determine the nature, rate, and extent (vertical and horizontal) of contamination in both soil and groundwater must be submitted to HRMB for approval. An entirely new workplan is not necessary. It will suffice to submit pages (containing the modifications to the existing workplan and the date of revision) that may be inserted into the existing, approved workplan which was last modified in March 1994. The Phase II RFI Workplan, or the modifying pages, is due within 45 days of NRC's receipt of this letter.

The Phase II RFI Workplan must address the shortcomings of the RFI to date so that the data presented in the Final RFI Report are technically adequate for use in developing and evaluating alternatives during the Corrective Measures Study. The June 18, 1993 revised RFI schedule requires NRC to submit the Final RFI Report within 60 days of receipt of this letter. However, since workplan modifications are necessary, the Due Date for the Final RFI Report will be 180 days following HRMB's approval of the Phase II RFI Workplan. Please note that the Final RFI Report was originally due July 25, 1990 (cf. NMED's January 24, 1990 letter to NRC) and HRMB does not feel it is necessary to delay further the investigation and cleanup of contaminated soils and groundwater. The Final RFI Report, rather than being another draft, should indeed be the final RFI Report. 2/1/95

**SPECIFIC COMMENTS:**

<u>ITEM</u>	<u>COMMENT</u>
-------------	----------------

- |    |   |
|----|---|
| 1. | Section 2.2, page 2-3, paragraph 1. ("...the requirements (of the RFI)...are outlined in Section C...and in Section F...of the permit issued to the facility on March 25, 1988.") The permit for the North Colony Landfarm was issued on January 22, 1988. Guidance for corrective action (of which the RFI is a part) is found in Attachment G, item 4, of the permit. |
| 2. | Section 2.2, page 2-3, paragraph 2. (The primary goals of the NCL RFI...were to...define the degree and extent of contamination.) HRMB finds that neither the vertical nor horizontal extent of contamination has been defined.   |
| 3. | Section 8.0, page 8-1, item #4. ("...most, if not all, of the hydrocarbon contamination detected in subsurface soils below the base of the unit...is not the result of releases of applied refinery waste constituents from the   |

base of the unit.") Data in the July 1994 Draft RFI Report indicate vertically-continuous hydrocarbon contamination from 2 feet below the ground surface down to the maximum depth reached in deep borings C-13 and C-15, from 4 feet to the bottom of D-14, and from 6 feet to total depth in D-15. In addition, hydrocarbon contamination was found in shallow borings B-12, B-14, C-11, C12, C-14, C-17, C-18, and D-12 below the base of the treatment zone. These data indicate migration of contaminants from the NCL to below the Treatment Zone.

4. Section 8.0, page 8-2, item #5. ("Releases, if any, of hazardous constituents from the base of the NCL unit probably have been limited with respect to the affected area and quantity of released constituents.") Based on the information in this draft report, the NCL did release contaminants into the underlying vadose zone and groundwater. The impact of the releases is unknown. Because of this, a contamination characterization which will define the extent and concentration of the contaminant plume needs to be done. Refer to the Owsen Directive, Task IV, Part C, "Contamination Characterization" for guidance.
5. Section 7.1, page 7-1, paragraph 1. ("Without exception, the analytical data obtained from samples collected during the trench and borings investigations indicated that unit soils pose no risk to underlying groundwater due to the release of either chromium or lead constituents.") Table 6-4, "Soil Boring Samples: Total Chromium and Lead Concentrations", pages 6-6 and 6-7, shows that in samples taken from beneath the treatment zone, chromium (in most samples) and lead (in many samples) concentrations are higher than the background levels (8 mg/kg for Chromium and 4 mg/kg for lead in BG-6). Chromium and lead concentrations in the four Observation Trenches, as shown in Table 6-1 on page 6-2, also exceed background levels. Release of chromium and lead to below the base of the unit's treatment zone, with attendant risk to the groundwater, is suggested.
6. Section 7.2, page 7-3. (Based on the available data, in the immediate area of the landfarm, the next water bearing zone beneath the NSSZ is at a depth in excess of 100 ft.) Also, Section 1.0, page 1-1, paragraph 4. ("...the near-surface saturated zone is underlain by at least 60-70 ft. of impermeable clay.") In PE B-1, the deep boring south of the unit, the near surface saturated zone (NSSZ) extends from 18 to 23 feet below the ground.

The log for this boring indicates there are wet sandy zones and gravel interbedded with the clay in the 60 feet beneath the NSSZ. In NCL D-1, the deep boring north of the unit, the NSSZ extends from 21 to 37.5 feet below the ground surface. The log for this boring shows there are clayey sands, silty sands, and gravel interbedded with the clay in the 60 feet beneath the NSSZ. Since the uppermost aquifer (the NSSZ) is contaminated, but the extent of contamination undetermined, and the geometry of permeable strata unknown, HRMB is also concerned with contamination of deeper aquifers.

7. Section 8.0, page 8-2, item #5. ("Therefore, it is concluded that future efforts intended to insure the protection of human health and the environment will be most effectively directed towards delineation, interception, and treatment or recovery of the hydrocarbon product contained in the near-surface saturated zone present in the vicinity of the unit.") The first step, i.e. delineation, can be accomplished by completing Task IV of the OSWER Directive. NRC's current efforts at intercepting and recovering hydrocarbons in the NSSZ should continue while the delineation of contamination is completed.
8. Appendix D (Continued), "Deep Geotechnical Borings". The map following the log for the Deep Boring, completed on 5/12/94, needs additional explanation. It is unclear what the map shows and why it was included. Also a location for Boring Number Seven, the log of which follows the above map, is needed.

**OTHER MATTERS OF INTEREST:**

- 1) NRC needs to be aware that compliance with the RFI requirements does not ensure conformance with the July 19, 1988 Compliance Order and July 25, 1990 Settlement Agreement. HRMB is currently reviewing the status of the two documents and will advise you of our findings in a separate letter.
- 2) Could you provide a map of the northwest part of the facility (including the NCL, the Tetraethyl Lead (TEL) Area, and the North Division/North Tankfarm) and surrounding land which shows the location of all wells which can be used for groundwater monitoring purposes? This, along with well construction information and groundwater analytical data from wells other than the TEL and NCL wells now reported quarterly to HRMB, may prove useful in determining the extent of contamination in groundwater.

NRC-NCL-RFI Report  
December 30, 1994  
Comments Attachment  
page 5

- 3) The Monthly Progress Reports, Task VII of the OSWER Directive, for Tasks III through VI are due on the first Monday of each month (as stipulated in HRMB's June 18, 1993 letter to NRC). Submittal of the reports is a requirement of your Permit under Attachment G, item 4. The reporting was suspended while HRMB reviewed and commented on the July 1994 Draft RFI Report and should be renewed now. The next progress report is due February 6, 1995.
- 4) Finally, in reviewing our files we were not able to find construction information for monitoring well NCL-49. Within ten (10) days of receiving this letter please forward a copy of the certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, material setting elevations, material specifications, construction details, and soil conditions encountered in the boring for the well.

OIL CONSERVATION DIVISION  
RECEIVED

'94 MAR 19 AM 8 50

May 9, 1994

Thomas Howell  
City of Artesia  
P.O. Drawer 1309  
Artesia, NM 88211

Dear Mr. Howell:

The Solid Waste Bureau hereby confirms the approval for disposal of solidified asphalt from Navajo Refining at the Artesia Landfill. Fred Bennett initially confirmed this disposal on November 17, 1993 in a letter to Ronald Loyd.

If I can be of further assistance, please contact me. My telephone number in Santa Fe is (505) 827-2950.

Sincerely,

*J. David Duran*

J. David Duran  
Manager  
Permits and Compliance Section  
Solid Waste Bureau

JDD

cc: Darrell Moore, Navajo Refining  
Roger Anderson, Oil Conservation Division

Bruce King  
Governor

Judith M. Espinosa  
Secretary

Ron Curry  
Deputy Secretary

Harold Runnels Building  
1190 St. Francis Drive  
P.O. Box 26110  
Santa Fe, NM 87502  
(505) 827-2850  
FAX (505) 827-2836





STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

13  
April 13, 1994

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-073**

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159

**RE: Approval of Effluent Pipeline Test Procedures  
Navajo Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Moore,

The New Mexico Oil Conservation Division (OCD) has received your April 11, 1994 proposal to hydrostatically test the three mile long effluent pipeline from the main refinery complex to the disposal ponds. The proposal was received on April 13, 1994 and includes procedures to accomplish the testing of the pipeline.

The pipeline test procedures are approved as proposed.

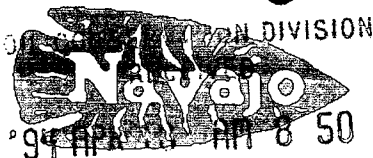
Please be advised that the approval of this operation does not relieve you of liability should your operation result in actual pollution of surface waters, ground waters or the environment which may be actionable under other laws and/or regulations. In addition, OCD approval does not relieve Navajo of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, call me or Roger Anderson at (505) 827-4080.

Sincerely,

Robert L. Myers II  
Petroleum Engineer Specialist

xc: OCD Artesia Office



## REFINING COMPANY

TELEPHONE  
(505) 748-3311

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

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

April 11, 1994

Mr. Roger Anderson  
Oil Conservation Division  
Environmental Bureau  
Land Office Bldg.  
P.O. Box 2088  
Santa Fe, NM 87501

### Re: Testing the Effluent Pipeline, Navajo Refining Co., Eddy County, New Mexico

Dear Mr. Myers,

Navajo is in receipt of your response to our procedure to test the effluent pipeline at our Artesia refinery. Below is a re-written version of our earlier proposal with changes in bold type. We think this proposal should remove any concerns OCD may have about this procedure.

As part of Navajo's discharge plan (GW-28), Navajo is required to test our three mile long effluent pipeline from the main refinery complex to the disposal ponds. This is in addition to other below grade waste piping. Toward that end, Navajo would like to get approval from OCD for a test method for this particular piping as follows:

1. The line will be pigged to help remove any air pockets.
2. Flow will be shut off and a rubber balloon will be inflated in the pond end of the pipeline to plug off that end.
3. The line will be filled with our waste water which will exert a hydrostatic head of approximately 22 psi at the end of the pipe. As you know, this line is gravity fed. Also, vents along the line should remove any remaining air pockets.
4. At the refinery end of the pipeline, **a stand pipe will be installed that is at least seven (7) feet high.** This will exert the OCD minimum of 3 psi at the refinery end of the pipe. The standpipe will be marked and recorded.
5. The level in the standpipe will be watched and recorded over a two hour period at 15 minute intervals.
6. The plug in the pond end of the pipeline will be removed and we will go back to normal operations.



Navajo would like to obtain procedural authorization to perform this test with the actual timing of the test to be determined. Your prompt attention to this matter would be greatly appreciated. If you have any questions or comments, please call me at 505-748-3311.

Regards,

A handwritten signature in black ink that reads "Darrell Moore". The script is cursive and fluid, with the first name and last name clearly distinguishable.

Darrell Moore  
Environmental Specialist



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

April 7, 1994

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-070**

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159

**RE: Approval of Effluent Pipeline Test Procedures  
Navajo Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Moore,

The New Mexico Oil Conservation Division (OCD) has received your March 30, 1994 proposal to hydrostatically test the three mile long effluent pipeline from the main refinery complex to the disposal ponds. The proposal was received on April 6, 1994 and includes procedures to accomplish the testing of the pipeline.

As proposed, the test would exert a hydrostatic head of approximately 22 psi on the pond end of the pipeline. However, there would be no hydrostatic pressure at the refinery end of the pipeline since this is a gravity feed system. The OCD requires a minimum of 3 psi (equivalent to 7 feet of hydrostatic head) for satisfactory underground drain line testing for the length of the drain line, which would not occur following the proposed procedures until approximately 2100 feet down the pipeline.

Based on the information supplied in your March 30, 1994 letter, the proposed effluent pipeline test procedures **are not approved** due to the lack of proper test pressures at the refinery end of the pipeline. The remainder of the procedures are satisfactory. If you have any questions, call me or Roger Anderson at (505)827-4080.

Sincerely,

Robert L. Myers II  
Petroleum Engineer Specialist

xc: OCD Artesia Office

## DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

## DISTRICT II

P.O. Drawer DD, Artesia, NM 88211-0707

## DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87412

State of New Mexico

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

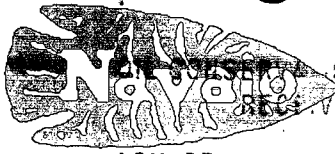
SUBMIT 2 COPIES TO  
APPROPRIATE DISTRICT  
OFFICE IN ACCORDANCE  
WITH RULE 116 PRINTED  
ON BACK SIDE OF FORM

## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

OPERATOR				ADDRESS				TELEPHONE #			
NAVAJO Refining - Lea Plant				Box 2110 Lovington				346-5821			
REPORT OF	FIRE	BREAK	SPILL	LEAK	BLOWOUT	OTHER*					
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTRY	PIPE LINE	GASO PLNT	OIL RFY	X				
FACILITY NAME: NAVAJO Refining - Lea Plant											
LOCATION OF FACILITY					SEC.	TWP.	RGE.	COUNTY			
Qtr/Qtr Sec. or Footage					36	165	36E	LEA			
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK											
5 miles SOUTH OF Lovington Hwy. 18											
DATE AND HOUR OF OCCURRENCE				DATE AND HOUR OF DISCOVERY							
4-1-94 2 <sup>00</sup> pm				2 <sup>10</sup> pm - 4-1-94							
WAS IMMEDIATE NOTICE GIVEN?		YES	NO	NOT REQUIRED		IF YES, TO WHOM					
		X				Denise					
BY WHOM				DATE AND HOUR							
STEVE H Terry				5 <sup>20</sup> pm - 4-1-94							
TYPE OF FLUID LOST				QUANTITY OF LOSS				VOLUME RECOVERED			
Topped Crude				125 BBLs				95 BBLs			
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO	QUANTITY							
			X								
IF YES, DESCRIBE FULLY**											
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**											
Steam coil leak + over-heating of tank CAUSED product to expand AND RUN the tank over											
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**											
Area around 1214 TR & EAST of 1214 TR. Product contained in secondary containment											
DESCRIPTION OF AREA		FARMING		GRAZING		URBAN		OTHER*			
SURFACE CONDITIONS		SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY	SNOW			
					X		X				
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**											
80° Temp, wind calm.											
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF											
SIGNED		PRINTED NAME AND TITLE				DATE					
Steve H Terry		STEVE H Terry Safety Coord.				4-4-94					

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY



ON DIVISION  
RECEIVED

REFINING COMPANY

'94 APR 6 AM 8:49

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

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

TELEPHONE  
(505) 748-3311

March 30, 1994

Mr. Roger Anderson  
Oil Conservation Division  
Environmental Bureau  
Land Office Bldg.  
P.O. Box 2088  
Santa Fe, NM 87501

**Re: Testing the Effluent Pipeline, Navajo Refining Co., Eddy County, New Mexico**

Dear Roger,

As part of Navajo's discharge plan (GW-28), Navajo is required to test our three mile long effluent pipeline from the main refinery complex to the disposal ponds. This is in addition to other below grade waste piping. Toward that end, Navajo would like to get approval from OCD for a test method for this particular piping as follows:

1. The line will be pigged to help remove any air pockets.
2. Flow will be shut off and a rubber balloon will be inflated in the pond end of the pipeline to plug off that end.
3. The line will be filled with our wastewater which will exert a hydrostatic head of approximately 22 psi at the end of the pipe. As you know, this line is gravity fed. Also, vents along the line should remove any remaining air pockets.
4. The outfall box at the refinery end of the pipeline will be marked and recorded.
5. The level in the outfall box will be watched and recorded over a two hour period at 15 minute intervals.
6. The plug in the pond end of the pipeline will be removed and we will go back to normal operations.

Navajo would like to obtain procedural authorization to perform this test with the actual timing of the test to be determined. Your prompt attention to this matter would be greatly appreciated. If you have any questions or comments, please call me at 505-748-3311.

Regards,

*Darrell Moore*

Darrell Moore  
Environmental Specialist



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

February 21, 1994

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-061**

Mr. David G. Griffin  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88211-0159

**RE: Discharge Plan Requirement  
Fire Training Facility Secondary  
Containment Basin  
Navajo Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Griffin,

The Oil Conversation Division (OCD) has received your February 10, 1994 response to the OCD's January 25, 1994 request for additional information about Navajo's January 20, 1994 proposal to install a containment basin for capturing excess run-off from fire training exercises at the Artesia Refinery, located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9, N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Under the provisions of the Water Quality Control Commission (WQCC) Regulations, this proposal should be submitted as a modification to the existing discharge plan, GW-028.

The February 10th response fails to address all the items in question in the OCD's February 25th letter. Due to the shallow depth to groundwater in this area, and existence of groundwater contamination, justification of this design is required. The following items shall be addressed prior to OCD's final decision of approval of this proposal:

- Water quality analysis of the water to be captured in this basin. If necessary, submit an analysis of the firewater immediately, with estimates of hydrocarbon contamination level, and submit another test following the next fire training exercise; and,

Mr. David G. Griffin  
February 22, 1994  
Page 2

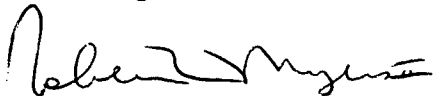
- Frequency of use and quantities to be stored in this basin, plus freeboard calculations, if necessary.

For a clay-lined pond to be approved without secondary containment, EPA requires that the compacted materials meet a permeability (transmissivity) of  $10^{-7}$  cm/sec. Navajo will have to commit to this standard for approval of this proposal, and to testing of the clay liner after construction.

Submittal of the requested information will be necessary to determine if the proposal is a minor or major modification to GW-028. A timely submittal of the following information will expedite the review of the application and approval of the discharge plan modification.

If there are any questions on this matter, please feel free to contact Bobby Myers at 827-4080.

Sincerely,



Robert L. Myers II  
Petroleum Engineer Specialist

RLM/rlm

XC: OCD Artesia Office



REFINING COMPANY

TELEPHONE  
(505) 748-3311

'94 FEB 15 AM 8 35

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

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

February 10, 1994

Mr. Bobby Myers  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

Re: Additional Information on Fire Training Facility Secondary Containment Basin

Dear Mr. Myers:

In response to your letter of January 25, 1994, Navajo would like to clear up any misunderstandings and resolve the concerns expressed in your letter. Navajo constructed an industrial fire training facility for the periodic use by Navajo's Emergency Response Team. Navajo has also allowed the participation in training exercises of area Fire Departments (Roswell, Artesia, Carlsbad, Hobbs, Lovington, and many others). Navajo believes it is beneficial to the Refinery, as well as the region as a whole, to have well trained fire fighters with actual experience in the dangerous type of fires associated with the oil industry. Many aspects of oil industry fire fighting are unique, such as the use of special fire fighting equipment and techniques that are not ordinarily taught to fire fighters. The facility at Navajo provides an economical way for our team to train and offers a way for regional fire fighters to get training their respective departments may not be able to afford, otherwise.

The basin Navajo is proposing to construct is designed to be secondary containment for the training facility. The facility itself has primary containment completely enclosing the area where the process fires are staged. This primary containment includes an oil/water separator designed to retain the un-combusted oil used in training. The secondary basin Navajo is proposing to construct will capture any water exiting the oil/water separator and also catch any overspray. Both the primary containment and this secondary basin are required to be emptied within 24-hours of a training event, per a permit issued by NMED Air Quality. This removal of remaining fluids is done to prevent any unnecessary emissions of fugitive hydrocarbons. This quick removal will minimize the time any water stands in the basin. Navajo finds that it would no longer be economically viable to support the training facility if the significant cost of installing a dual liner-leacate collection system is deemed necessary for this basin.

Navajo's bentonite clay liner, as proposed, will be constructed by first excavating out the basin and then vibratory compacting the bottom to an 85 proctor. Next a bentonite-soil mixture of 2 lbs. bentonite per cubic foot will be placed in the basin and compacted to an 85 proctor. The next layer to be placed will be top soil, also compacted to 85 proctor. Once the final layer is in place, Navajo will fill the basin with fresh water to hydrate the clay liner. The top layer is designed to protect the clay liner beneath from drying out, thus cracking and becoming porous between training events. Navajo believes that timely removal of water from the basin, combined with a protected clay liner will prevent any impact to groundwater on this site.

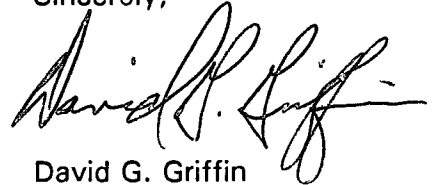
*permit should include required for permeability -  $10^{-7}$  cm/sec*

*An Independent Refinery Serving ... NEW MEXICO • ARIZONA • WEST TEXAS*

Mr. Myers  
Page 2

If you have any additional questions please contact either Neal Lewis or myself at 748-3311.

Sincerely,

A handwritten signature in black ink, appearing to read "David G. Griffin". The signature is fluid and cursive, with a long horizontal stroke at the end.

David G. Griffin  
Supt. Environmental  
Affairs/Quality Control

DGG/pb

cc: NRL





STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

February 7, 1994

**CERTIFIED MAIL**

**RETURN RECEIPT NO. P-176-012-059**

Mr. Darrell Moore  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159

**RE: Approval to Dispose of Hydrotest Water  
Navajo Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Moore,

The New Mexico Oil Conservation Division (OCD) has received your January 27, 1994 request to dispose of hydrotest water used for the hydrostatic testing of a diesel tank which has been relocated to the Navajo Artesia Refinery from another facility. Navajo is requesting to spread this water on the farm adjacent to the refinery. Navajo has submitted analytical results for the water, including general water chemistry, metals, PAH's and BTEX.

Based on the information supplied in your request, and the additional test information submitted (by telefax on February 4, 1994) for the reported high lead level in the initial metals analysis, this letter confirms the verbal approval given on February 7, 1994.

Sincerely,

Robert L. Myers II  
Petroleum Engineer Specialist

xc: OCD Artesia Office



REFINING COMPANY

EASYLINK

62905278

FAX

(505) 746-6410 ACCTG

(505) 746-6155 EXEC

(505) 748-9077 ENGR

(505) 746-4438 P / L

TELEPHONE  
(505) 748-3311

RECEIVED

'94 FEB 4 AM 8 35

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

February 4, 1994

Mr. Robert Myers II  
Petroleum Engineering Specialist  
Oil Conservation Division-Environmental Bureau  
State Land Office Bldg.  
P.O. Box 2088  
Santa Fe, NM 87504

Dear Mr. Myers:

Navajo is currently in the process of building a new diesel tank. This tank is one that was moved from another facility and is being re-erected on our site. We have filled the tank with water to hydrotest it and are now at the point of looking for ways to dispose of the approximately 35000 barrels of water. I recently talked to Bill Olson of your office and he gave me some guidance on the analytical we will need to satisfy OCD. Our plan is to put the water on the farm we own adjacent to the refinery. OCD has allowed us to do this with past hydrotest water.

We had tests run for general water chemistry, metals, PAH's and Btex. The tank was steam cleaned so there will be no solvents and we know by way of process knowledge that other WQCC and RCRA parameters will not be present such as Uranium and PCB's. As you know, these results came back high on lead and that metal was re-run by graphite atomization. Randy Peck, of Westech Labs, has sent me a letter detailing why the second run came back below the standard. I have included a copy of that letter for your information. The operations department has asked me to speed this approval process along because the tank needs to be put into service.

Thank you for your time in this matter. If you have any questions, please feel free to call me at 748-3311.

Regards,

Darrell Moore  
Environmental Specialist



**Westtech  
Laboratories  
Inc.**

The Quality People  
Since 1955

10737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

February 4, 1994

Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88211

Attn: Darrell Moore

Dear Darrell

This letter is in response to your inquiry concerning the difference in reportable results from flame atomic absorption vs. graphite atomization, especially concerning your sample number 6400322. Both techniques are based upon the same principle (atomic absorption), but graphite atomization is used for low (sub-ppm) levels of lead while the flame technique is used for higher concentrations. Typically, the flame technique has fewer interferences, is faster and less expensive, and thus is the method of choice if the concentration is high enough. Graphite atomization is usually reserved for fairly clean, low-level analyses such as drinking water. Since NPDES allowable limits are usually around 0.5 ppm, flame is normally used for discharge waters.

In this particular case, the original analysis was performed by flame. At or near the detection limit, background "noise" is enough to cause a fluctuation that can lead to erroneous results. Since these fluctuations are less than the above mentioned (0.5 ppm) levels, it is usually not a problem. When we used the graphite technique, we were in a more appropriate working range for this element.

I apologize for not being aware that the state was requiring a 0.05 ppm limit for this sample. Please let me know when you require low levels of detection, and we will utilize the appropriate instrumentation. Again, I apologize for the misunderstanding and hope that this letter fully explains the situation.

Sincerely,

Randy R. Peck  
Managing Director



NAVAJO REFINING COMPANY  
P.O. DRAWER 159  
501 EAST MAIN STREET  
ARTESIA, NEW MEXICO 88210  
PHONE: (505) 748-3311

ENGINEERING DEPARTMENT  
FAX: (505) 748-9077

## SENDING TO:

NAME

Bobby Myers

ORGANIZATION/FIRM

OCD - Environmental Bureau

TELECOPY #

827-5741

## SENDING FROM:

NAME

Darrell Moore

DATE

1/31/94

NUMBER OF PAGES, INCLUDING THIS COVER PAGE

5

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL TRISH AT EXT. 270, OR PATTI AT EXT. 202

## MESSAGE:

Here's the analysis from ~~an~~ the water in our new Deisil Tank. I would appreciate it if you would call me with your answer at 748-3311. Thanks so much.

Darrell Moore

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is privileged and confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error or are not sure whether it is privileged, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service.

Thank you!

01/31/94

15:10

NAVAJO REFINING CO

002

**Westech  
Laboratories  
Inc.**The Quality People  
Since 195510737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594CLIENT NAVAJO REFINING COMPANY  
501 E. MAIN / P.O. BOX 159  
ARTESIA, NM 88211SAMPLE NO. : 6400352  
INVOICE NO.: 62140001  
REPORT DATE: 01-28-94  
REVIEWED BY: *[Signature]*  
PAGE : 1 OF 1CLIENT SAMPLE ID : New Diesel Tank  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: D. Moore  
SUBMITTED BY .....: D. Moore  
SAMPLE SOURCE ....: --  
ANALYST .....: C. WarnerAUTHORIZED BY : D. Moore  
CLIENT P.O. : --  
SAMPLE DATE ...: 01-26-94  
SUBMITTAL DATE : 01-27-94  
EXTRACTION DATE: --  
ANALYSIS DATE : 01-27-94Method 8020 - Aromatic Volatiles

## D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3

(1) Copy to Client

*[Signature]*  
Managing Director



**Westech  
Laboratories  
Inc.**

The Quality People  
Since 1955

10737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

CLIENT NAVAJO REFINING COMPANY  
501 E. MAIN / P.O. BOX 159  
ARTESIA, NM 88211

SAMPLE NO. : 6400352  
INVOICE NO.: 62140001  
REPORT DATE: 01-28-94  
REVIEWED BY: *XXX*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : New Diesel Tank  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: D. Moore  
SUBMITTED BY .....: D. Moore  
SAMPLE SOURCE ....: --  
ANALYST .....: C. Warner

AUTHORIZED BY : D. Moore  
CLIENT P.O. : --  
SAMPLE DATE ...: 01-26-94  
SUBMITTAL DATE : 01-27-94  
EXTRACTION DATE: 01-27-94  
ANALYSIS DATE .: 01-28-94

Method 8100/610 Polynuclear Aromatic Halocarbons

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Acenaphthene .....	<10.	ug/L	10.
Acenaphthylene .....	<10.	ug/L	10.
Anthracene .....	<10.	ug/L	10.
Benzo(a)anthracene .....	<10.	ug/L	10.
Benzo(a)pyrene .....	<10.	ug/L	10.
Benzo(b)fluoranthene .....	<10.	ug/L	10.
Benzo(ghi)perylene .....	<10.	ug/L	10.
Benzo(k)fluoranthene .....	<10.	ug/L	10.
Chrysene .....	<10.	ug/L	10.
Dibenzo(a,h)anthracene .....	<10.	ug/L	10.
Fluoranthene .....	<10.	ug/L	10.
Fluorene .....	<10.	ug/L	10.
Indeno(1,2,3-cd)pyrene .....	<10.	ug/L	10.
Napthalene .....	<10.	ug/L	10.
Phenanthrene .....	<10.	ug/L	10.
Pyrene .....	<10.	ug/L	10.



**Westtech  
Laboratories  
Inc.**

The Quality People  
Since 1955

10737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

CLIENT NAVAJO REFINING COMPANY  
501 E. MAIN / P.O. BOX 159  
ARTESIA, NM 88211

SAMPLE NO. : 6400322  
INVOICE NO.: 62140001  
REPORT DATE: 01-24-94  
REVIEWED BY: *[Signature]*  
PAGE : 1 OF 2

CLIENT SAMPLE ID : New Diesel  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: D. Moore  
SUBMITTED BY .....: D. Moore  
SAMPLE SOURCE ....: --

AUTHORIZED BY : D. Moore  
CLIENT P.O. : --  
SAMPLE DATE ...: 01-20-94  
SUBMITTAL DATE : 01-24-94  
EXTRACTION DATE: --

Navajo Refining Company

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Alkalinity, Total	190	mg/L	2.0	01-24-94
Ammonia Nitrogen	<0.10	mg/L	0.1	01-24-94
Total Arsenic	<0.10	mg/L	0.10	01-24-94
Total Barium	1.1	mg/L	0.20	01-27-94
Bicarbonate	100	mg/L	2.	01-24-94
Carbonaceous BOD	<5.0	mg/L		01-24-94
Total Cadmium	<0.05	mg/L	0.05	01-26-94
Total Calcium	210	mg/L	0.05	01-27-94
Calc. Fe	<2.0	mg/L	2.	01-24-94
Chloride	19	mg/L	1.	01-24-94
Total Chromium	<0.10	mg/L	0.10	01-26-94
Chemical Oxygen Demand	<10	mg/L	10	01-24-94
Electrical Conductivity	1200	umhos/cm		01-24-94
Total Copper	<0.05	mg/L	0.05	01-25-94
Fluoride	1.10	mg/L	0.1	01-25-94
Hardness	780	mg/L	0.1	01-27-94
Total Iron	3.2	mg/L	0.10	01-26-94
Total Lead	0.21	mg/L	0.10	01-25-94
Total Magnesium	62	mg/L	0.05	01-27-94
Total Manganese	0.12	mg/L	0.05	01-26-94
Total Mercury	<0.001	mg/L	0.001	01-25-94
pH	7.8	S.U.		01-24-94
Phenol, Total	<0.01	mg/L	0.01	01-26-94
Total Potassium	<1.0	mg/L	1.0	01-25-94
Total Selenium	<0.10	mg/L	0.10	01-25-94
Total Silver	<0.05	mg/L	0.05	01-26-94
Dissolved Silicon	8.7	mg/L	5.0	01-27-94
Total Sodium	14	mg/L	1.0	01-25-94
Total Suspended Solids	24	mg/L	1.	01-24-94
Sulfate	470	mg/L	5.0	01-24-94

(1) Copy to Client

*[Signature]*  
Managing Director

01/31/94

15:12

NAVAJO REFINING CO.

005

**Westech  
Laboratories  
Inc.**The Quality People  
Since 198510737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594CLIENT NAVAJO REFINING COMPANY  
501 E. MAIN / P.O. BOX 159  
ARTESIA, NM 88211SAMPLE NO. : 6400322  
INVOICE NO.: 62140001  
REPORT DATE: 01-24-94  
REVIEWED BY: ~~///~~  
PAGE : 2 OF 2

## D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
Sulfide, Total .....	<1.0	mg/L	1.0	01-24-94
Total Dissolved Solids .....	720	mg/L	2.0	01-24-94
Nitrogen, Total Kjeldahl .....	2.8	mg/L	0.1	01-27-94
Total Organic Carbon .....	<1.0	mg/L	1.	01-28-94
Total Zinc .....	0.18	mg/L	0.05	01-26-94





REFINING COMPANY

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

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

TELEPHONE  
(505) 748-3311

January 27, 1994

Mr. Robert Myers II  
Petroleum Engineering Specialist  
Oil Conservation Division-Environmental Bureau  
State Land Office Bldg.  
P.O. Box 2088  
Santa Fe, NM 87504

Dear Mr. Myers:

Navajo is currently in the process of building a new diesel tank. This tank is one that was moved from another facility and is being re-erected on our site. We have filled the tank with water to hydrotest it and are now at the point of looking for ways to dispose of the water. I recently talked to Bill Olson of your office and he gave me some guidance on the analytical we will need to satisfy OCD. Our plan is to put the water on the farm we own adjacent to the refinery. OCD has allowed us to do this with past hydrotest water.

We are having tests run for general water chemistry, metals, PAH's and Btex. The tank was steam cleaned so there will be no solvents and we know by way of process knowledge that other WQCC parameters will not be present such as Uranium and PCB's.. The operations department has asked me to speed this approval process along because the tank needs to be put into service. Therefore, I am sending this letter detailing our plans with the results of the analysis to follow. Our lab has told us that the results will be ready Monday morning. At that time I will fax the results to you so you can make a determination.

Thank you for your time in this matter. If you have any questions, please feel free to call me at 748-3311.

Regards,

*Darrell Moore*

Darrell Moore  
Environmental Specialist



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

January 25, 1994

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-057**

Mr. Neal R. Lewis  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88211-0159

**RE: Discharge Plan Requirement  
Navajo Artesia Refinery  
Eddy County, New Mexico**

Dear Mr. Lewis,

The Oil Conversation Division (OCD) has received your January 20, 1994 proposal to install a containment basin for capturing excess run-off from fire training exercises at the Artesia Refinery, located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9, N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. This proposal was received on January 14, 1994. Under the provisions of the Water Quality Control Commission (WQCC) Regulations, this proposal should be submitted as a modification to the existing discharge plan, GW-028.

Additional information is required before the OCD can approve the proposed containment basin. Submittal of the requested information will be necessary to determine if the proposal is a minor or major modification to GW-028. A timely submittal of the following information will expedite the review of the application and approval of the discharge plan modification.

Due to the shallow depth to groundwater in this area, and existence of groundwater contamination, justification of this design is required. This should include:

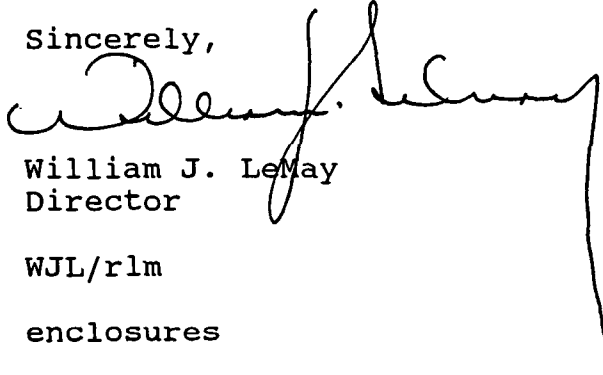
- Justification of installation without using a lined basin with secondary containment and leak detection;

Mr. Neal R. Lewis  
January 25, 1994  
Page 2

- Soil compaction criteria and installation procedures, plus anticipated design soil leaching capacity;
- Water quality analysis of the water to be captured in this basin;
- Frequency of use and quantities to be stored in this basin, plus freeboard calculations, if necessary; and,
- Anticipated water retention time in the basin and proposed removal method and procedure.

If there are any questions on this matter, please feel free to contact Bobby Myers at 827-4080.

Sincerely,

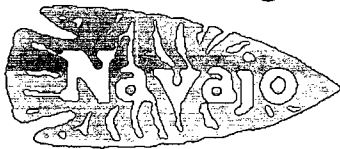


William J. LeMay  
Director

WJL/rlm

enclosures

XC: OCD Artesia Office



TELEPHONE  
(505) 748-3311

# REFINING COMPANY

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

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(505) 746-6410 ACCTG  
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(505) 746-4438 P / L

January 20, 1994

Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

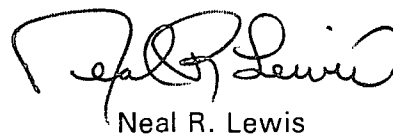
Mr. Roger Anderson:

This letter is to advise you of Navajo's efforts to contain any excess run-off of contaminated water resulting from fire training exercises.

Please refer to our attached drawing; 55-172-D, which illustrated our plan for this containment basin. This project work is scheduled to begin on January 26, 1994. We expect the project completion in early February, 1994, in order to hold training exercises in March, 1994.

If you have any questions or comments, please call me at 505-748-3311.

Sincerely,

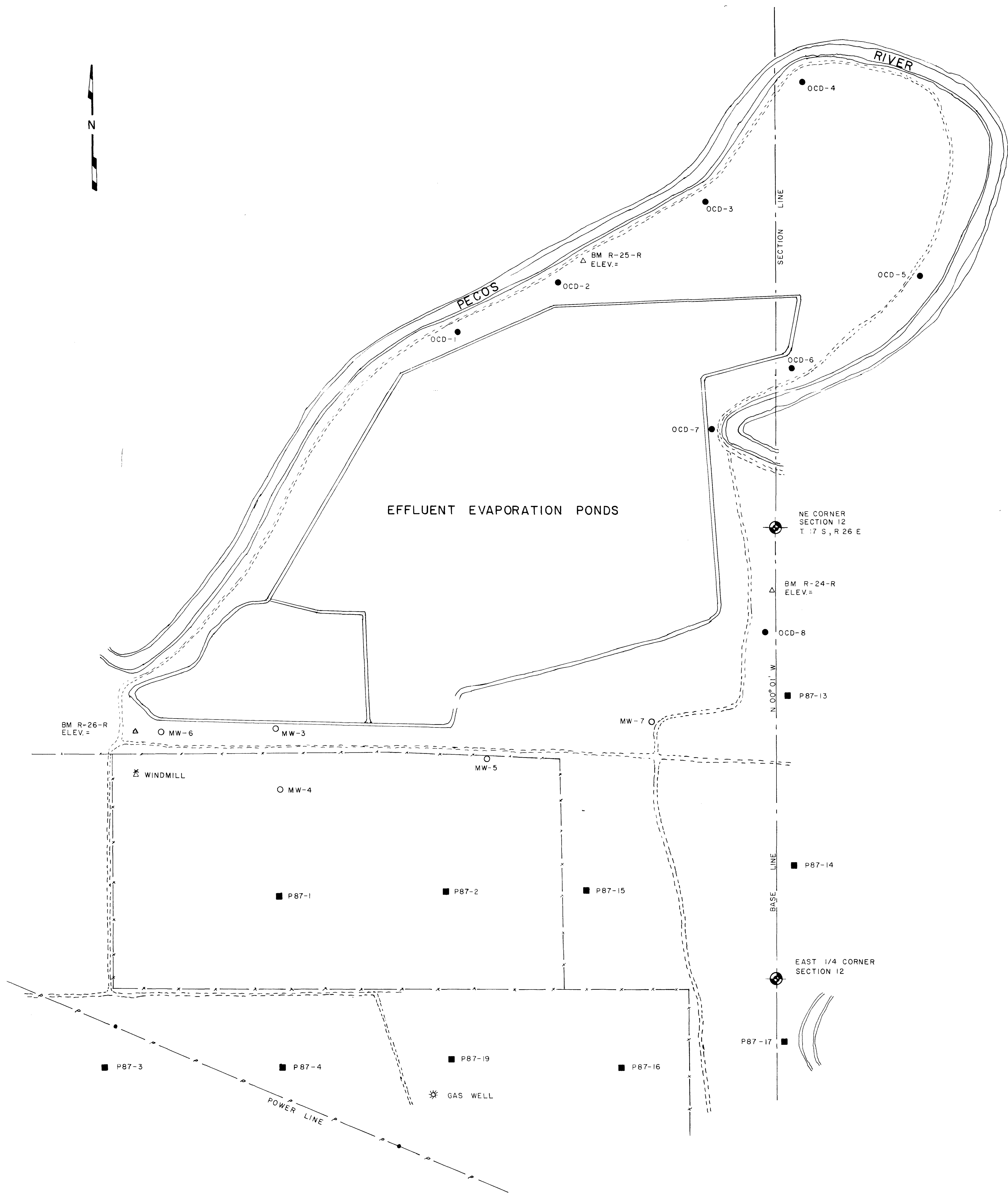


Neal R. Lewis

NRL/pb

cc: MPC, CDY, RRH, DGG

existing cont  
mostly contained water  
contaminated with contaminants  
detected here



MONITORING WELLS				
EFFLUENT EVAPORATION PONDS				
NAVAJO REFINING COMPANY				
ARTESIA		EDDY COUNTY		NEW MEXICO
McFARLAND ENGINEERING				
JOB NO 89069	DRAWN <u>BMC</u>	SCALE 1"= 300'	DATE 8/89	SHEET <u>1</u> OF <u>1</u>



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

January 12, 1994

**CERTIFIED MAIL  
RETURN RECEIPT NO. P-176-012-055**

Mr. Darrell G. Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 87210

**RE: Discharge Plan GW-28  
Artesia Refinery  
Eddy County, New Mexico**

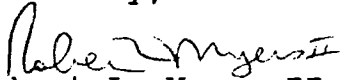
Dear Mr. Moore,

The Oil Conservation Division (OCD) sent a letter dated November 9, 1993 which requested Navajo to respond to several items noted during a review of the Artesia Refinery discharge plan files. This letter was received by Navajo, via certified mail, on November 12, 1993. As of today's date, no response has been received by the OCD.

Therefore, the OCD requests that you submit a response to OCD's November 9, 1993 correspondence by February 25, 1994.

If you have any questions, please call me at (505)827-4080.

Sincerely,

  
Robert L. Myers II  
Petroleum Engineering Specialist  
xc: OCD Artesia Office

# Complaints target Navajo on air, water

By DANIEL RUSSELL

Staff Writer

Navajo Refining officials heard several complaints and concerns from area landowners and citizens at a public hearing Monday night.

Meeting at the Artesia Public Library, Navajo officials were grilled by citizens on the contamination of ranch land and the air quality as a result of Navajo's refining process.

Navajo is facing a \$7 million fine for disposing of wastewater at its evaporative ponds that contained higher than permitted levels of benzene. It must hold two public hearings per year as part of a hazardous waste permit.

Officials stated the company remains in negotiations with the Environmental Protection Agency over the amount of the fine and is being required to close its ponds.

David Griffin, superintendent of environmental affairs, reported the refinery has been in compliance with benzene levels for the past two and a half years.

Darrell Moore, an environmental specialist with Navajo, said the company has closed its second pond. He said tests from the first pond closed have not been returned but are expected within the next few months.

When the meeting opened for public comment, Jerry and Gladys Holt, of Plainview, Texas, who own 80 acres south of the ponds, told Navajo officials they were upset about the contamination, and Navajo drilling on their property.

"We've had five horses die on that property and all of them drank the water out of our well," said Mrs. Holt. "We've also been told ... three monitoring wells have been drilled. No one has asked our permission to drill."

Moore responded that Navajo indeed may not have contacted the Holts about drilling monitoring wells on their property but would ensure permission is granted in all future drilling. He added tests from those wells showed nothing was

wrong with the water.

"I've seen an oil slick on the well," responded Mr. Holt about his well where the horses drank, which is too salty for human consumption.

"Whose permission did you get to drill wells? Nobody has asked my permission. If I went on Navajo's property without permission you'd have me in jail," said Mrs. Holt. "I just can't believe they just went in there and drilled three holes without our permission."

They also said the grass is dying on the property along with the horses.

"There's salt grass on that place and it's dying. It's got to be from something from those ponds," said Mrs. Holt.

Griffin said the monitoring wells had not shown any problems but if the Holts found an oil slick in their well, then they could contact Navajo immediately and it would investigate.

Richard Mayer, an engineer with the EPA from Dallas, said the contamination chemicals are all elements of gasoline. He said some of those elements are heavy metals and others are organic-based and will eventually disappear.

Mrs. Holt then alleged the contamination is spreading because the soil on her property smells "awful."

"The best consultants Navajo can buy ... don't think you've been affected," said Griffin, explaining all the test data is available to the public in the library.

He continued by explaining that deep underground water is under pressure and pushing upward. This upward push prevents the groundwater, like that in the ponds, from seeping down.

He said evaporative ponds and ditches have been used for several decades when regulations permitted the practice.

"Then why the \$7 million fine?" asked Vera Austin, an Artesia resident. "... Why is Navajo moaning about something they messed up?"

"The \$7 million fine is calculated

from Navajo putting hazardous waste in the ponds and it didn't notify the EPA," said Mayer, explaining the U.S. Department of Justice is negotiating with Navajo over the fine.

When asked by City Councilor Nadine Copeland what Navajo is planning to do with its wastewater once its ponds are closed, Navajo officials said no decision has been made. But, they are studying other water treatment methods, a reduction in the use of water and deep water injection. Only 5,000 gallons per day are sent by Navajo to the city's wastewater plant, and it meets "all pretreatment standards."

Another Artesia resident, Carolyn Walsh, said she is concerned about the air quality in Artesia.

"In the last two weeks, any time you get up it (Navajo) looks like hell itself," she said.

Walsh said she often has problems with her eyes, ears and respiratory tract burning. She said her calls in the middle of the night to Navajo Refining workers were unsuccessful in getting answers. She added she was concerned about the health of students attending Roselawn Elementary.

"Something is making people very sick," she said. "Navajo is important to the town and I go to church with a lot of you, but Navajo has got to take some kind of responsibility for the children."

Artesian Bob Collins and Austin agreed with Walsh, stating they too are often irritated by an odor, which they said is usually worse at night.

Phil Youngblood, recently hired by Navajo as director of environmental affairs, responded that he would investigate the complaints and that Navajo remained "all the more committed" to ensuring it is in compliance with regulations.

"Sometimes we can be well below any levels as far as health but still be an irritant," he said, adding monitoring equipment is used at the plant and around town.



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

November 9, 1993

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-045**

Mr. Darrell G. Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 87210

**RE: Discharge Plan GW-28**  
**Artesia Refinery**  
**Eddy County, New Mexico**

Dear Mr. Moore,

As part of my new responsibilities with the Oil Conservation Division, I have recently spent some time reviewing the files for Navajo's Artesia Refinery and familiarizing myself with the issues at hand. In this letter, I have tried to summarize the various issues found during this review, including discharge monitoring and reporting requirements in the discharge plan, apparently unresolved matters relating to various operations at the facility, and a summary of the observations made during OCD's May 1993 facility inspection. Please review the following comments and observations, and respond as appropriate.

**A. Discharge Plan (and modifications) Reporting Requirements:**

1. Annual sampling of the pipeline effluent for BTEX, major cations/anions, fluoride, WQCC metals and PAH's;
2. Annual split sampling (with OCD) of monitoring wells for water level, pH and conductivity from field measurements, and for BTEX, major cations/anions and fluoride from laboratory analyses. Monitor wells MW-4 and MW-6 will also be analyzed for naphthalene and mononaphthalene.
3. Semi-annual monitoring of wells MW-4 MW-5 for water level, pH and conductivity from field measurements, and for BTEX, major cations/anions and fluoride from laboratory analyses;
4. Quarterly sampling of the RO reject water for those constituents listed in the 4/27/93 discharge plan modification (and the amended fluoride standard - OCD 6/29/93);



Mr. Darrell Moore  
November 9, 1993  
Page 2

5. Bi-weekly sampling of the Reverse Osmosis (RO) reject water for major cations/anions and heavy metals (request with OCD to relax this to quarterly based on analysis results);
6. Daily monitoring and recording of the pipeline effluent discharge flow quantities; and
7. Copies of all reports and correspondence with EPA and NMED referencing refinery SWMU's.

B. Unresolved Questions Based on File Review

1. What is the progress status of the closure of the oil and tank bottoms in the earthen sludge pit adjacent to Tank 835?
2. A time table for the completion of integrity testing of all below grade waste piping was to be submitted after verification, which was submitted in February, 1991. The timetable is to be submitted and testing performed prior to renewal of the current discharge plan, which expires October 21, 1996. This is to include the three-mile long effluent pipeline from the main refinery complex to the disposal ponds.
3. What is the progress status of closure of Pond #1?
4. Has the catchment and drainage for tanks 130, 132, 133 and 135 been installed as per the drawings submitted to OCD in July 1990?

The observations listed below were noted during the May, 1993 OCD inspection of the facility. Navajo shall submit a method(s) and procedure(s) to address each category of observations which will assure that materials with constituents that can be harmful to fresh water and the environment be adequately contained. Navajo has addressed "housekeeping procedures" in your July 5, 1990 correspondence with OCD; however, implementation of these procedures is inadequate, as seen during the latest inspection.

C. Cleanup and Containment Needs

1. The muriatic acid saddle tank and the oil/water drum in the Asphalt Loading Area need cleaned up and contained.
2. Transfer pumps and open drums containing oil at the Asphalt Tank Farm need cleaned up and contained.
3. Pumps at the South Plant Cooling Tower area, and transfer pumps and spills throughout the Vacuum Tower area need cleaned up and contained. The diesel saddle tank in this area needs cleaned up and curbs added to pad to contain spills. Drip trays for pumps and compressors should be monitored and drained before they spill over.

Mr. Darrell Moore  
November 9, 1993  
Page 3

4. At the South Plant Water Treating Area, numerous pump pads need cleaned up and leaks contained, and spill trays are overflowing.
5. The pad containing treatment chemicals at the South Plant Distillation Tower needs some type of containment to prevent leaks or spills from running off the pad.
6. The area north of the Distillation Tower has contaminated soils which need to be cleaned up and the source determined.
7. The old oil/water Separator in the South Plant should be closed out.
8. Drums in the Product Tank Farm need to be contained, and empty drums stored properly.
9. Cleanup and improved containment is needed for the Hazardous Waste Press storage area for the temporary storage of the hazardous waste drums.
10. The area around the frac tanks storing sludge needs cleaned up and leaks contained.
11. The chemical additive saddle tanks in the Gasoline Loading Area need cleaned up and leaks contained.
12. Leaks from the pumps in the Reverse Osmosis Unit are overflowing the pads.
13. The compressor dryers in the North Plant Process Area need to be cleaned up and containment installed.
14. Drums placed throughout the North Plant Process Area to capture drips need to be emptied before they overflow.
15. Soils under the FCC Area pipes and valves just north of the cooling tower need to be cleaned up.
16. The pump building in the tank farm at the northwest end of the facility needs cleaned up and containment installed for the pumps sitting on gravel. Also, the drums at this site should be placed on containment.
17. The transfer pumps west of the tank farm need containment.
18. The Truck Loading Area, the Rail Loading Area and the Diesel Tank Transfer Area all need cleaned up and containment.

Mr. Darrell Moore  
November 9, 1993  
Page 4

19. The storage tanks around the Maintenance Shop need surrounding soils cleaned up and leaks contained.

#### D. Cleanups Around Tanks

The following tanks (by area) were noted to have excessive spillage and/or oil-stained soils around the structures, valves and transfer pumps, and may also need improved containment for the overflow sumps:

- Tanks 132, 133 and 135,
- Tanks 417 and 418,
- Tanks 110, 411 and 438,
- Tanks 437 and 439,
- Tank 54,
- Tank 810, and
- Tank 838.

#### E. Annual Inspections for Below-Grade Sumps and Tanks

During the May 1993 OCD inspection, it was noted that numerous below-grade sumps and tanks were not equipped with secondary containment or leak detection. Navajo should submit a method(s) and schedule for testing the integrity of ALL sumps and tanks. If any of the sumps or tanks require replacement in the future, or new ones are installed, leak detection must be integrated into the design. The particular sumps and tanks identified during the inspection include:

- Asphalt Loading Area loading pad sump,
- South Plant TCC Tower sumps,
- South Plant Water Treating Area sumps,
- South Plant Distillation Tower sump,
- Tank sumps at the tank farm north of the South Plant,
- Product Tank Farm Tank 110 sump and Tank 438 below-grade tank,
- North Plant Process Area sumps,
- FCC Area Wastewater Separator below-grade tank,
- Northwest tank farm pump house sumps,
- Rail Loading Area sump,
- Diesel Tank 837 below-grade tank,
- Below-grade separator north of Tank 838, and
- Maintenance Shop sumps.

#### F. Truck By-Pass Landfarm

Roger Anderson has confirmed the verbal permission for the one-time disposal of cooling tower sludge from the Lovington refinery at the Truck By-Pass Landfarm. However, my file review shows no record of this landfarm being permitted to accept any wastes, whether from the Artesia refinery or the Lovington refinery. In order to bring

Mr. Darrell Moore  
November 9, 1993  
Page 5

this landfarm into compliance with WQCC regulations, Navajo shall submit an application to modify Discharge Plan GW-28 to include operation of this landfarm. This application shall include:

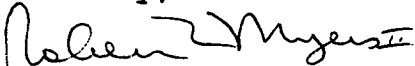
1. Initial date of operation of the landfarm;
2. An inventory of all wastes placed on the landfarm, including origin, quantity and date of emplacement of each batch, and records of any tests confirming the non-hazardous nature of each batch;
3. A description of the landfarming procedures being practiced, including spreading rates, lift thicknesses and discing frequencies; and
4. Results of any monitoring data to demonstrate that contaminants are not migrating from the landfarm area.

To assist in the submittal of this application, I have enclosed a copy of OCD's Guidelines for Permit Application, Design, and Operation of Cenralized & Commercial Landfarms.

I hope that this review accurately reflects the Navajo files as I have summarized them. I would be grateful if you would note any errors or omissions here, as well as responding to the requested information and comments.

I look forward to working with Navajo in my new position with the Oil Conservation Division. If you have any questions, please call me at (505)827-4080.

Sincerely,



Robert L. Myers II  
Petroleum Engineering Specialist  
xc: OCD Artesia Office

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG

(505) 746-6155 EXEC

(505) 748-9077 ENGR

(505) 746-4438 P/L

RECEIVED  
OIL CONSERVATION DIVISION

"93 NOV 15 AM 8 50

November 3, 1993

Mr. Roger Anderson  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87502

Dear Mr. Anderson:

As per your verbal approval during our phone conversation of November 3, 1993, Navajo Refining will transport the waste from our cooling tower at Lea Refining to the Truck By-Pass Landfarm, here at Navajo Refining in Artesia. The waste will be spread out evenly over the landfarm to allow maximum remediation. The waste is non-hazardous, as the attached analysis shows. If you have any questions, please call me at (505) 748-3311.

Regards,

*Darrell Moore*

Darrell Moore  
Environmental Specialist

DGM/pb

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

August 9, 1993

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(505) 746-4438 P / L

Mr. Roger Anderson  
Oil Conservation Division  
Environmental Bureau  
P.O. Box 2088  
Santa Fe, N.M. 87504-2088

Re: Bi-Weekly R.O. Reject Testing

Dear Roger,

*in RO Reject water file*

The test results of the first four R.O. reject water tests indicate that there is very little fluctuation in the results. Since there is only minor differences and the cost of these tests is significant we would like to request the test frequency be changed to quarterly.

Please find attached, a schedule of tests, results and graphs for each substance tested for, to show the relative change. The May 18, 1993 test did not test for cations or anions but was the required quarterly test of the R.O. reject.

There are two tests in progress at this time and those results along with any additional tests that may be completed before the testing change is granted will be reported on a timely basis.

Should you have any questions concerning this matter, please contact Ron Loyd at 748-3311.

Sincerely,

  
Virginia Langford  
Vice President of Refining

VRL/te

Encl.



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

July 26, 1993

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 208B  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-667-242-160

Mr. Virgil R. Langford, Vice President  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan GW-28  
Artesia Refinery  
Eddy County, New Mexico

Dear Mr. Langford:

The Oil Conservation Division (OCD) has received your request, dated July 1, 1993, to modify the previously approved discharge plan GW-28 for the Artesia Refinery. The proposed modification will allow Navajo Refining Co to continue discharging the R.O. reject water for irrigation purposes.

Based on the information provided and the analytical results of the R.O. reject water, the modification of the previously approved discharge plan is **hereby approved**. The conditions contained in the March 10, 1993 temporary authorization remain in effect. This modification is considered a minor modification and public notice was not given.

The discharge plan modification was submitted pursuant to Section 3-109.F of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note Section 3-109.F., which provides for possible future amendment of the plan. Please be advised that approval of this modification does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter) shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

Mr. Virgil R. Langford  
July 26, 1992  
Page -2-

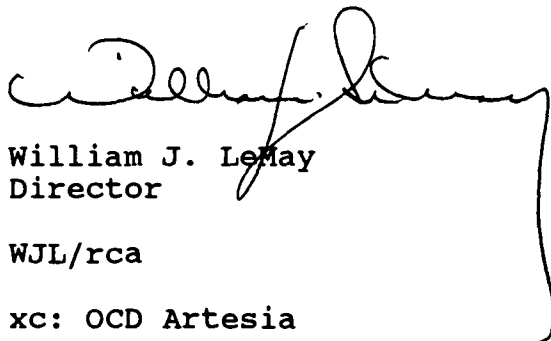
Please note that section 3-104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.C. you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

The discharge plan modification for the Navajo Refining Company Artesia Refinery is subject to the WQCC Regulation 3-114 discharge plan fee. Every billable facility submitting a discharge plan modification be assessed a fee equal to the filing fee of fifty (50) dollars plus a flat rate equal to one-half the discharge plan fee.

The OCD has received your \$50 filing fee. The flat fee for this modification has been waived.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan modification review.

Sincerely,



William J. Lemay  
Director

WJL/rca

xc: OCD Artesia



TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

EASYLINK  
62905278

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

July 7, 1993

Roger Anderson  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

Re: RO Reject Water

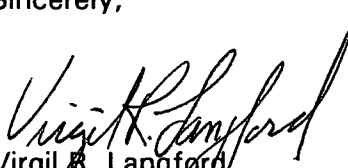
Dear Mr. Anderson:

This letter is to request an extension of time for the emergency discharge permit issued to Navajo Refining Company. Navajo's RO reject water has been used for the past 100 days for irrigation of agriculture land along Eagle Creek; this has been of benefit to the farmer that farms and grazes the Navajo property.

The current emergency permit is valid until July 13, 1993; please advise by phone prior to that date if we need to turn the water into Eagle Creek.

Thank you in advance for your consideration.

Sincerely,

  
Virgil R. Langford  
Vice President of Refining

VRL/rh

TELEPHONE  
(505) 748-3311



OIL CONSERVATION DIVISION  
**REFINING COMPANY**

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

EASYLINK  
62905278

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

July 1, 1993

Mr. Roger Anderson  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87502

RE: DISCHARGE PLAN GW-28


Dear Mr. Anderson:

In accordance with your recent telephone conversation with Ron Loyd, regarding Navajo's Reverse Osmosis reject waste, we hereby request that the emergency discharge terms be made a permanent part of the above discharge permit.

Our understanding is that we would be allowed to discharge the waste either to Eagle Creek or onto the farm area (emergency permit), at our discretion, and that the current testing requirements would be the same, along with reports of the volume of water sent to each location.

We have enclosed a check in the amount of \$50 for a minor permit modification. Please call Ron Loyd at 748-3311 if you have questions.

Sincerely,



Virgil R. Longford  
Vice President of Refining

VRL/pb

enclosure

ACKNOWLEDGEMENT OF RECEIPT  
OF CHECK/CASH

I hereby acknowledge receipt of check No. [REDACTED] dated 7/1/93,  
or cash received on 7/23/93 in the amount of \$ 50.00  
from Navajo Refining Company  
for Artesia Refinery GW-28

Submitted by: \_\_\_\_\_ (Facility Name) Date: \_\_\_\_\_ (DP No.)  
Submitted to ASD by: Kathy Brown Date: 7/23/93  
Received in ASD by: A. Alou Date: 7/23/93

Filing Fee ☒ New Facility \_\_\_\_\_ Renewal \_\_\_\_\_  
Modification ☒ Other \_\_\_\_\_  
(specify)

Organization Code 521.07 Applicable FY 93 94

To be deposited in the Water Quality Management Fund.

Full Payment \_\_\_\_\_ or Annual Increment \_\_\_\_\_

NAVAJO REFINING COMPANY

P.O. DRAWER 159  
ARTESIA, NEW MEXICO 88211-0159

NCNB TEXAS  
WICHITA FALLS, TX 76301

DATE  
7/1/93

PAY EXACTLY

\$50.00

GENERAL ACCOUNT

\*\*\*\*\*Fifty and no/100\*\*\*\*\*

PAY TO THE ORDER OF  
NMED - Water Quality Management  
P. O. Box 2088  
Santa Fe, NM 87504

Kathryn H. Wilken



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

June 29, 1993

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-667-242-157

Mr. Virgil R. Langford, Vice President  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan GW-28  
Artesia Refinery  
Eddy County, New Mexico

Dear Mr. Langford:

The Oil Conservation Division (OCD) has received your request, dated June 8, 1993, for a discharge plan agriculture exemption for use of the R.O. reject water for irrigation.

Based on the analytical results of the R.O. reject water which demonstrate that the effluent exceeds WQCC groundwater standards and that the primary purpose of the water from which the reject water is generated is for industrial use and not agriculture, the OCD has determined that the agriculture exemption does not apply.

Based on this determination, the continued use of the reject water for irrigation will require a modification of the previously approved discharge plan. This modification will be considered a minor modification.

If you have any questions, please call me at (505) 827-5812.

Sincerely,

Roger C. Anderson  
Environmental Bureau Chief

xc: OCD Artesia



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

June 29, 1993

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-667-242-159

Mr. Darrell G. Moore  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan GW-28  
Artesia Refinery  
Eddy County, New Mexico

Dear Mr. Moore:

The Oil Conservation Division (OCD) has received your request, dated June 8, 1993, for review of the fluoride standard of 1600 ug/l that was placed on the R.O. reject water discharged into Eagle Draw.

The 1600 ug/l standard is based on WQCC ground water standards and not on surface water standards. Based on analytical results of the ground water in the area of the discharge which demonstrate that fluoride concentrations naturally exceed the WQCC groundwater standard, the fluoride standard in the April 27, 1993 modification of GW-28 is amended to 2500 ug/l.

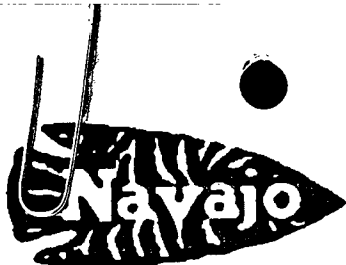
If you have any questions, please call me at (505) 827-5812.

Sincerely,

Roger C. Anderson  
Environmental Bureau Chief

xc: OCD Artesia

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P.O. BOX 2088

ARTESIA, NEW MEXICO 88211-0159

OIL CONSERVATION DIVISION

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

June 08, 1993

Roger Anderson  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

Re: OCD Discharge Permit - GW28  
NPDES - Permit Applied For NM0030074

Dear Mr. Anderson,

*in RO Reject Water*

Enclosed please find the first quarter sample analysis of the Reverse Osmosis Reject water discharged pursuant to the above mentioned permits or applications.

Navajo respectfully requests that OCD review the Fluoride standard of 1600 ug/l in Navajo permit. Due to the fact that fluoride in the ground water in the discharge area tests above that level and therefore the local concentration should become the maximum.

Please contact the undersigned at (505)748-3311 ext. 281 if you have any questions regarding these test results.

Sincerely,

*Darrell Moore*

Darrell G. Moore  
Environmental Specialist

DGM/rh

enclosures

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

EASYLINK  
62905278

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

**RECEIVED**

**JUN 22 1993**

**OIL CONSERVATION DIV.  
SANTA FE**

June 08, 1993

Roger Anderson  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 26110  
Santa Fe, NM 87502

Re: Water Quality Control Commission (WQCC)  
Regulation 3-105

Dear Mr. Anderson:

As you are aware the Oil Conservation Division (OCD) has issued Discharge Plan GW-28 with modification to allow R.O. Reject water to be discharged into Eagle Creek. Navajo Refining Co. (Navajo) plans to retain and comply with all aspects of that permit for purposes of discharge into Eagle Creek. In maintaining compliance with GW-28 all WQCC Regulations concerning water contaminants are being met either in terms of absolute standards as contained in WQCC Regulations or in terms of standards allowed by regulation through existing conditions.

Due to the fact that Navajo is in compliance with the WQCC Regulations and will continue to test and report discharge contaminants pursuant to Discharge Plan GW-28. The use of the water for irrigated agriculture allows that use to be exempt from Sections 3-104 and 3-106 of the WQCC Regulations. Section 3-104 would, except for the exemption, require a discharge plan modification. Section 3-106 would, except for the exemption, require approval of the director of a discharge plan or modification. The WQCC Regulations require Navajo's R.O. Reject water to meet the criteria of the regulations for purposes of irrigation but do not require a discharge plan or approval because of the use of the water.

*in R.O. Reject Water Reg.*

The first test results of the R.O. Reject water indicate that Navajo is in compliance with the WQCC regulations for discharges onto or below the surface of the ground. Continued monitoring under GW-28 will allow OCD to monitor the quality of the irrigation water when used for that purpose or when discharged directly into Eagle Creek.

Mr. Anderson  
Page 2

To be specific, Navajo is not claiming an exemption from regulation by WQCC or OCD authority. Navajo does claim that WQCC Regulation Section 3-105 does apply to the R.O. Reject water in terms of the discharge plan and approval requirements. Based upon this claim Navajo plans to use the R.O. Reject water discharge for irrigation purposes without applying for a modification of Discharge Plan GW-28.

In order to facilitate verification of compliance with the WQCC Regulations, Navajo is enclosing ground water tests of the farm irrigation area showing contaminant levels of the local ground water.

If you find Navajo's interpretation of the WQCC Regulation to be in error please advise the undersigned as soon as possible and direct Navajo in the requirements as interpreted by OCD. Absent notice from you to the contrary Navajo plans to continue irrigation of agricultural land upon expiration of the current emergency discharge permit.

Sincerely,



Ron S. Loyd  
Regulatory Compliance Auditor

RSL/rh

enclosures



TELEPHONE  
(505) 748-3311

OIL CONSER  
RE

'93 JUN 1

AM 9 10



## REFINING COMPANY

501 EAST MAIN STREET • P.O. DRAWER 159

ARTESIA, NEW MEXICO 88211-0159

May 27, 1993

EASYLINK  
62905278

FAX

(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

Mr. J. David Duran  
Program Manager  
Permitting and Compliance  
Solid Waste Bureau  
P.O. Box 26110  
Sante Fe, NM 87502

Dear Mr. Duran:

I have enclosed for your perusal a copy of a letter from the Arizona Department of Environmental Quality that relates to our recent discussion concerning asphalt as solid waste. Just thought you might be interested.

We have not yet heard from your department personnel concerning the solid waste problems outlined in our letter of 3/22/93 to you, or in our discussion several weeks ago. Navajo is very interested in working with you or your staff in resolving as many issues as possible concerning our use of the local landfill.

We have begun discussions with the OCD staff concerning our problem and find that they are interested in a joint meeting to begin sorting out the various issues and identifying a plan of action for all concerned.

Please contact me as soon as possible to schedule a meeting with your personnel concerning our asphalt disposal issue and to review our other disposal problems.

Sincerely,

Ronald S. Loyd  
Regulatory Compliance Auditor

RSL/r lh

enclosure  
cc: OCD (Roger Anderson)

ACKNOWLEDGEMENT OF RECEIPT  
OF CHECK/CASH

I hereby acknowledge receipt of check No. [REDACTED] dated 5/4/93,  
or cash received on 5/7/93 in the amount of \$ 3,960.00  
from Navajo Refining Company  
for Artesia Refinery GW-28  
(Facility Name) (DP No.)

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
Submitted to ASD by: Kathy Brown Date: 5/7/93  
Received in ASD by: Anahe Alure Date: 5/7/93

Filing Fee ☒ New Facility \_\_\_\_\_ Renewal \_\_\_\_\_  
Modification ☒ Other \_\_\_\_\_  
(specify)

Organization Code 521.07 Applicable FY 93

To be deposited in the Water Quality Management Fund.

Full Payment ☒ or Annual Increment \_\_\_\_\_

\$3910 modification

\$50 filing fee

NAVAJO REFINING COMPANY

P.O. DRAWER 159  
ARTESIA, NEW MEXICO 88211-0159

NationsBank  
WICHITA FALLS, TX 76301

DATE

5/04/93 \*\*\*\*\*3,960 DOLLARS AND 00 CENTS\*\*\*\*\*

PAY EXACTLY

\$3,960.00\*

GENERAL ACCOUNT

PAY  
TO THE  
ORDER  
OF

NMED-WATER QUALITY MANAGEMENT  
% OIL CONSERVATION DIVISION  
PO BOX 2088  
SANTA FE NM 87504

[Signature]  
Kathy H Walker  
\$2,500.00 OR MORE REQUIRES COUNTER SIGNATURE

[REDACTED]  
NET AMOUNT

VOUCHER

EXPLANATION

05-0009

PERMIT MODIFICATION FEE FOR NAVAJO'S DISCHARGE PERMIT  
GW-28

3,960.00

3043

CHECK  
DATE

5/04/93

CHECK  
AMOUNT

3,960.00



BRUCE KING  
GOVERNOR

State of New Mexico

## ENVIRONMENT DEPARTMENT

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

May 3, 1993

Mr. William J. LeMay  
Director  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico

Re: Navajo Refinery - Discharge Plan GW-28

Dear Mr. Lemay:

Recently we had opportunity to work with Roger Anderson of your staff on the referenced Discharge Plan. As you know this facility encountered a unique situation where they were going to initiate wastewater discharge to a surface watercourse without a National Pollutant Discharge Elimination System permit. Since NPDES permits are the regulatory mechanism for protecting surface water quality in New Mexico there was a real problem. We very much appreciate Mr. Anderson and his staff consulting with us in the development of the DP effluent limits so that there is not only ground water quality protection but also surface water quality protection.

Sincerely,

Jim Piatt  
Chief  
Surface Water Quality Bureau

cc: Roger Anderson, OCD  
Kathleen M. Sisneros, NMED W&WMD





STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

April 27, 1993

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-667-242-156

Mr. Virgil R. Langford, Vice President  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan GW-28  
Artesia Refinery  
Eddy County, New Mexico

Dear Mr. Langford:

The modification of groundwater discharge plan GW-28 for the Navajo Refining Company Artesia Refinery located in the SE/4, Section 1, E/2 Section 8, W/2 Section 9, N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico **is hereby approved** under the conditions contained in the enclosed attachment. The discharge plan modification consists of the application dated December 10, 1992 and information dated January 7, 1993 submitted as supplements to the application.

The discharge plan modification was submitted pursuant to Section 3-106 of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note Section 3-109.F., which provides for possible future amendments of the plan.

Please note that section 3-104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.C. you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge quality or volume.

Please be advised that approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations. In addition, this approval does not relieve you of the requirement to comply with other local, state or federal rules and/or regulations.

Mr Virgil R. Langford  
April 27, 1993  
Page -2-

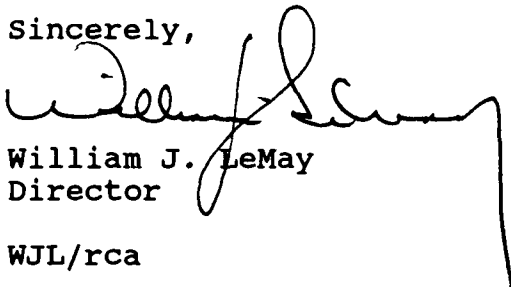
The discharge plan modification for the Navajo Refining Company Artesia Refinery is subject to the WQCC Regulation 3-114 discharge plan fee. Every billable facility submitting a discharge plan modification will be assessed a fee equal to the filing fee of fifty (50) dollars plus the flat rate of three-thousand nine-hundred and ten (3910) dollars for refineries.

The OCD has not received your \$50 filing fee. The flat fee for an approved discharge plan may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



William J. LeMay  
Director

WJL/rca

xc: OCD Artesia  
Jim Piatt - NMED  
State Engineer  
US Fish & Wildlife Service  
USEPA Region IV

**ATTACHMENT TO DISCHARGE PLAN GW-28 MODIFICATION  
NAVAJO REFINING COMPANY ARTESIA REFINERY  
DISCHARGE PLAN REQUIREMENTS  
(April 27, 1993)**

1. The \$50 filing fee and the \$3910 flat fee (either total payment or installment) will be paid upon receipt of this approval.
2. The discharge of reject water from the reverse osmosis treatment facility to Eagle Draw shall not exceed the following standards:

Aluminum	87	ug/l
Arsenic	100	ug/l
Beryllium	18	ug/l
Barium	1000	ug/l
Boron	750	ug/l
Cadmium	10	ug/l
-Chlordane	0.015	ug/l
Chlorine	30	ug/l
Chromium	50	ug/l
Cobalt	50	ug/l
Copper	1000	ug/l
Cyanide	18	ug/l
Fluoride	1600	ug/l
Iron	1000	ug/l
Manganese	200	ug/l
Lead	6	ug/l
Mercury	0.042	ug/l
Nickel	200	ug/l
-NH3 as N	0.07	ug/l
Radium 226+228	30	pCi/l
Selenium	12	ug/l
Silver	0.4	ug/l
Vanadium	282	ug/l
Zinc	10	mg/l
Sulfate	2661	mg/l
Chloride	275	mg/l
Total Dissolved Solids	4555	mg/l
-Chemical Oxygen Demand	125	mg/l
Ph	between 6.6 and 8.6	S.U.

3. Constituents not listed in 2. above for which there are standards established pursuant to WQCC Regulation 3-103 will not exceed the set numerical standard in that regulation.
- ✓ 4. No toxic pollutant listed in WQCC Regulation 1-101 UU. will be present in the discharge.

5. **SAMPLING:** Samples of the discharge will be taken and analyzed on the following schedule:
- ✓ 1. For major cations/anions and heavy metals on a bi-weekly (once every two weeks).
  - ✓ 2. All other constituents on a quarterly basis.
  3. Analysis for all parameters will be pursuant to EPA approved methods.
  4. Sampling and analytical QA/QC records will be retained for all sampling events.
  5. All samples will be "grab" samples.
  6. Discharge flow will be monitored and recorded on a daily basis.
  - ★ 7. Major cations/anions and heavy metal analysis frequency can be reduced to quarterly, on a parameter-by parameter basis, upon application and OCD approval provided all analytical data in the previous year was no greater than seventy-five (75) percent of the effluent limit.
  8. All samples collected in a monitoring period will be reported.
  9. Sampling and flow measurement will be representative of the volume and nature of the discharge.
  - ✓ 10. Sample data and analytical results will be reported to the OCD on a quarterly basis and are due prior to the 15th day of the month following the calendar quarter. (e.g. 1st quarter results are due prior to April 15).
6. The OCD will be notified of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination.





BRUCE KING  
GOVERNOR

State of New Mexico

ENVIRONMENT DEPARTMENT

Oil Conservation Division  
RECEIVED

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

93 APR 26 AM 9 57

April 21, 1993

Roger Anderson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87504

Re: Navajo Refinery - Discharge Limits

*Roger*  
Dear Mr. Anderson:

This letter is in response to your request that this office develop effluent limits for the referenced facility. In particular, limits necessary to protect surface water quality standards (WQS) and implement other appropriate requirements of State law regarding surface water quality protection (e.g., WQCC regulation Part 2 and the Water Quality Management Plan). You indicated these effluent limits will be incorporated into the Discharge Plan (DP) being issued by OCD. These limits are necessary because it will be sometime before the U.S. Environmental Protection Agency issues a National Pollutant Discharge Elimination System permit and the company wishes to commence the discharge. You further indicated in your request that OCD preferred effluent limits for all parameters for which there are water quality standards

The following is a table of effluent limits to protect surface water quality; OCD may find it necessary to add to or strengthen these limits to protect ground water:

Total Aluminum	87	ug/l
Total Arsenic	271	ug/l
Total Beryllium	18	ug/l
Total Boron	1441	ug/l
Total Cadmium	96	ug/l
Total Chlordane	0.015	ug/l
Total Chlorine	0.03	mg/l
Total Chromium	2144	ug/l
Total Cobalt	50	ug/l
Total Copper	3373	ug/l
Total Cyanide	18	ug/l
Total Lead	6	ug/l
Total Mercury	0.042	ug/l
Total Nickel	60096	ug/l
NH3-Unionized as N	0.07	mg/l



Roger Anderson  
April 21, 1993  
Page 2

Radium 226+228	104	pCi/l
Total Selenium	12	ug/l
Total Silver	0.4	ug/l
Total Vanadium	282	ug/l
Total Zinc	44030	ug/l
Total Dissolved Solids	644442	mg/l
Total Sulfate	75037	mg/l
Total Chloride	245709	mg/l
Chemical Oxygen Demand (COD)	125	mg/l
pH	between 6.6 and 8.6	S.U.
flow	monitor and report	MGD

Each limit is a "daily maximum" with the exception of pH.

#### **Suggested Implementation**

The following requirements are common to NPDES permits and are suggested for OCD's consideration. It is understood that OCD may already have requirements to the same end.

Analysis for all parameters should be restricted to federally approved methods found in 40 CFR 136, which is standard in NPDES permits. Attached is a list of analytical minimum quantification limits (MQLs) determined by EPA Region VI. In the event that analytical results are less than the MQL, the permittee may report that result as "zero". Sampling and analytical QA/QC records must be kept for all samples. It is especially important to document proper procedure and attainment of MQL detection limits in cases where "zero" is reported as described above.

I recommend that the monitoring frequency should be no less than once per 2 weeks for metals, ammonia, chlorine, chloride, COD, TDS, Sulfate, and radium 226+228. Chlordane or cyanide are less likely to be present from an reverse osmosis (RO) unit, therefore, a once per calendar quarter frequency is suggested. All samples should be "grab". Effluent flow should be monitored no less than once per day instantaneously.

I suggest consideration of a clause allowing reduction, on a parameter-by-parameter basis, of the once per 2 weeks frequency after one year's time. Frequency could be reduced to once per quarter provided all data collected for the parameter in the previous (full) year was no greater than seventy-five percent of the effluent limit. In the case of a reduced schedule if future sampling indicated exceedance of the seventy-five percent of the

Roger Anderson  
April 21, 1993  
Page 3

effluent limit value, the monitoring for that parameter would have to return to the once per 2 week frequency. All samples collected must be reported (i.e., if more than the prescribed number are collected) in a monitoring period. Sampling/flow measurement must be representative of the volume and nature of the discharge. Sample data should be summarized and reported to OCD on a quarterly basis and should be due prior to the 15th day of the month following the calendar quarter (e.g., 1st quarter results would be due by April 15th).

During the course of this project the U.S. Fish & Wildlife Service also contacted us about this discharge with the common concern of protecting surface water quality, therefore I am also providing them with a copy of this letter. If you have any questions, please contact me at 827-0187 or Glenn Saums at (505) 827-2827.

Sincerely,



Jim Piatt  
Chief  
Surface Water Quality Bureau

cc: Mark Wilson, USF&WS

MINIMUM QUANTIFICATION LEVELS (MQLs)

<u>METALS AND CYANIDE</u>	<u>REQUIRED MQL (ug/L)</u>	<u>EPA METHOD</u>
Antimony (Total) <sup>1</sup>	60	200.7
Arsenic (Total) <sup>1</sup>	10	206.2
Beryllium (Total) <sup>1</sup>	5	200.7
Cadmium (Total) <sup>2</sup>	1	213.2
Chromium (Total) <sup>1</sup>	10	200.7
Chromium (3+) <sup>1</sup>	10	200.7
Chromium (6+) <sup>1</sup>	10	200.7
Copper (Total) <sup>2</sup>	10	220.2
Lead (Total) <sup>2</sup>	5	239.2
Mercury (Total) <sup>1</sup>	.2	245.1
Nickel (Total) <sup>1</sup>	[Freshwater] 40	200.7
Nickel (Total) <sup>2</sup>	[Marine] 5	249.2
Selenium (Total) <sup>1</sup>	5	270.2
Silver (Total) <sup>2</sup>	2	272.2
Thallium (Total) <sup>1</sup>	10	279.2
Zinc (Total) <sup>1</sup>	20	200.7
Cyanide (Total) <sup>1</sup>	10	335.2
<u>DIOXIN</u>		
2,3,7,8-Tetrachloro-dibenzo- p-dioxin (TCDD) <sup>3</sup>	.00001	1613
<u>VOLATILE COMPOUNDS</u>		
Acrolein <sup>4</sup>	50	624
Acrylonitrile <sup>4</sup>	50	624
Benzene <sup>4</sup>	10	624
Bromoform <sup>5</sup>	10	624
Carbon Tetrachloride <sup>5</sup>	10	624
Chlorobenzene <sup>5</sup>	10	624
Chlorodibromomethane <sup>5</sup>	10	624
Chloroethane <sup>6</sup>	50	624
2-Chloroethyl vinyl ether <sup>4</sup>	10	624
Chloroform <sup>5</sup>	10	624
Dichlorobromomethane <sup>5</sup>	10	624
1,1-Dichloroethane <sup>5</sup>	10	624
1,2-Dichloroethane <sup>5</sup>	10	624
1,1-Dichloroethylene <sup>5</sup>	10	624
1,2-Dichloropropane <sup>5</sup>	10	624
1,3-Dichloropropylene <sup>5</sup>	10	624
Ethylbenzene <sup>5</sup>	10	624
Methyl Bromide [Bromomethane] <sup>6</sup>	50	624

Methyl Chloride [Chloromethane] <sup>6</sup>	50	624
Methylene Chloride <sup>5</sup>	20	624
1,1,2,2-Tetrachloroethane <sup>5</sup>	10	624
Tetrachloroethylene <sup>5</sup>	10	624
Toluene <sup>5</sup>	10	624
1,2-trans-Dichloroethylene <sup>5</sup>	10	624
1,1,1-Trichloroethane <sup>5</sup>	10	624
1,1,2-Trichloroethane <sup>5</sup>	10	624
Trichloroethylene <sup>5</sup>	10	624
Vinyl Chloride <sup>5</sup>	10	624
<u>ACID COMPOUNDS</u>		
2-Chlorophenol <sup>5</sup>	10	625
2,4-Dichlorophenol <sup>5</sup>	10	625
2,4-Dimethylphenol <sup>7</sup>	10	625
4,6-Dinitro-o-Cresol		
[2 methyl 4,6-dinitrophenol] <sup>8</sup>	50	625
2,4-Dinitrophenol <sup>5</sup>	50	625
2-Nitrophenol <sup>6</sup>	20	625
4-Nitrophenol <sup>5</sup>	50	625
p-Chloro-m-Cresol		
[4 chloro-3-methylphenol] <sup>5</sup>	10	625
Pentachlorophenol <sup>5</sup>	50	625
Phenol <sup>5</sup>	10	625
2,4,6-Trichlorophenol <sup>5</sup>	10	625
<u>BASE/NEUTRAL COMPOUNDS</u>		
Acenaphthene <sup>5</sup>	10	625
Acenaphthylene <sup>5</sup>	10	625
Anthracene <sup>5</sup>	10	625
Benzidine <sup>4</sup>	50	625
Benzo(a)anthracene <sup>5</sup>	10	625
Benzo(a)pyrene <sup>5</sup>	10	625
3,4-Benzofluoranthene <sup>5</sup>	10	625
Benzo(ghi)perylene <sup>6</sup>	20	625
Benzo(k)fluoranthene <sup>5</sup>	10	625
Bis(2-chloroethoxy) methane <sup>5</sup>	10	625
Bis(2-chloroethyl) ether <sup>5</sup>	10	625
Bis(2-chloroisopropyl) ether <sup>5</sup>	10	625
Bis(2-ethylhexyl) phthalate <sup>5</sup>	10	625
4-Bromophenyl phenyl ether <sup>5</sup>	10	625
Butyl benzyl phthalate <sup>5</sup>	10	625
2-Chloronaphthalene <sup>5</sup>	10	625

4-Chlorophenyl phenyl ether <sup>5</sup>	10	625
Chrysene <sup>5</sup>	10	625
Dibenzo (a,h) anthracene <sup>6</sup>	20	625
1,2-Dichlorobenzene <sup>5</sup>	10	625
1,3-Dichlorobenzene <sup>5</sup>	10	625
1,4-Dichlorobenzene <sup>5</sup>	10	625
3,3'-Dichlorobenzidine <sup>6</sup>	50	625
Diethyl Phthalate <sup>5</sup>	10	625
Dimethyl Phthalate <sup>5</sup>	10	625
Di-n-Butyl Phthalate <sup>5</sup>	10	625
2,4-Dinitrotoluene <sup>5</sup>	10	625
2,6-Dinitrotoluene <sup>5</sup>	10	625
Di-n-octyl Phthalate <sup>5</sup>	10	625
1,2-Diphenylhydrazine <sup>4</sup>	20	625
Fluoranthene <sup>5</sup>	10	625
Fluorene <sup>5</sup>	10	625
Hexachlorobenzene <sup>5</sup>	10	625
Hexachlorobutadiene <sup>5</sup>	10	625
Hexachlorocyclopentadiene <sup>5</sup>	10	625
Hexachloroethane <sup>6</sup>	20	625
Indeno (1,2,3-cd) pyrene <sup>6</sup> (2,3-o-phenylene pyrene)	20	625
Isophorone <sup>5</sup>	10	625
Naphthalene <sup>5</sup>	10	625
Nitrobenzene <sup>5</sup>	10	625
N-nitrosodimethylamine <sup>6</sup>	50	625
N-nitrosodi-n-propylamine <sup>6</sup>	20	625
N-nitrosodiphenylamine <sup>6</sup>	20	625
Phenanthrene <sup>5</sup>	10	625
Pyrene <sup>5</sup>	10	625
1,2,4-Trichlorobenzene <sup>5</sup>	10	625

#### PESTICIDES

Aldrin <sup>5</sup>	.05	608
Alpha-BHC <sup>5</sup>	.05	608
Beta-BHC <sup>5</sup>	.05	608
Gamma-BHC (Lindane) <sup>5</sup>	.05	608
Delta-BHC <sup>5</sup>	.05	608
Chlordane <sup>5</sup>	.2	608
4,4'-DDT <sup>5</sup>	.1	608
4,4'-DDE (p,p-DDX) <sup>5</sup>	.1	608
4,4'-DDD (p,p-TDE) <sup>5</sup>	.1	608
Dieldrin <sup>5</sup>	.1	608

Alpha-endosulfan <sup>5</sup>	.1	608
Beta-endosulfan <sup>5</sup>	.1	608
Endosulfan sulfate <sup>5</sup>	.1	608
Endrin <sup>5</sup>	.1	608
Endrin aldehyde <sup>5</sup>	.1	608
Heptachlor <sup>5</sup>	.05	608
Heptachlor epoxide <sup>5</sup> (BHC-hexachlorocyclohexane)	.05	608
PCB-1242 <sup>5</sup>	1.0	608
PCB-1254	1.0	608
PCB-1221	1.0	608
PCB-1232	1.0	608
PCB-1248	1.0	608
PCB-1260	1.0	608
PCB-1016	1.0	608
Toxaphene <sup>5</sup>	5.0	608

- 1 CRDL
- 2 Method 213.2, 239.2, 220.2, 272.2
- 3 Dioxin National Strategy
- 4 No CRQL established
- 5 CRQL basis, equivalent to ML
- 6 ML basis, higher than CRQL
- 7 CRQL basis, no ML established
- 8 CRQL basis, higher than ML

Table 7. Results of monitoring well chemical analyses, Navajo Refinery, February 1992.

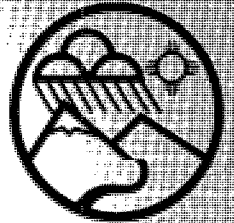
Constituent	Units	Monitoring Well											Travel blank
		1A	2A	3A	4	5	6	7	8	9	3A dup	5 dup	
Benzene	µg/L	ND	0.9	0.2	1400	11200	33100	1.5	1500	ND	ND	-	ND
Toluene	µg/L	ND	0.4	ND	2300	4000	8300	2	1000	1	0.7	-	ND
Ethylbenzene	µg/L	ND	0.3	ND	900	3000	3100	1.2	1100	ND	ND	-	ND
p, m-Xylene	µg/L	ND	0.5	ND	1600	2300	5300	1.2	800	0.2	0.2	-	ND
o-Xylene	µg/L	ND	0.2	ND	700	900	1800	1	300	0.3	0.3	-	ND
pH	s.u.	7.1	7.4	7.1	6.7	7.2	7.1	7.2	7.3	7.1	7.2	7.2	
Conductivity	µmhos/cm	5741	4116	6460	3730	2310	2540	3410	3530	3390	5710	2310	
Calcium	mg/L	577	477	688	260	191	210	291	471	276	652	180	
Magnesium	mg/L	379	231	258	162	116	124	185	204	186	261	117	
Potassium	mg/L	5	4	8.5	1.2	1	1.2	0.8	0.9	0.6	3	1	
Sodium	mg/L	285	144	400	279	104	138	203	148	219	435	112	
Total alkalinity	mg/L	373	282	347	566	757	736	459	388	624	236	754	
Chloride	mg/L	275	155	412	629	248	275	279	124	330	428	244	
Sulfate	mg/L	2661	1804	2547	432	65	179	1090	1750	787	2690	66	
TDS, calculated	mg/L	4555	3067	4660	2329	1482	1538	2058	3086	2423	4705	1474	

ND — Not detected at detection level of 0.2 µg/L.

TDS — Total dissolved solids. Calculated by sum of constituents using alkalinity.

Note: Copies of laboratory forms with detection limits are shown in Appendix C.





STATE OF NEW MEXICO  
ENVIRONMENT DEPARTMENT

MEMORANDUM

TO: Bill Olson, OCD

FROM: Jim Piatt, NMED

DATE: 15 March 1993

RE: Navajo Refinery: Water Quality Based Effluent Limits

Our review of the available data indicates the following:

- 1.) No effluent limits for TDS, sulfate and chloride are required.
- 2.) Effluent limitations for COD of 125 mg/l and pH between 6.6 and 8.6 S.U. should be incorporated based on requirements in WQCC Regulation 2-101.
- 3.) Because the receiving stream has existing and attainable biological uses, we will need data for the following toxicants if we are to be able to determine standards attainment:

aluminum, arsenic, boron, cadmium, chromium, cobalt, copper, lead, selenium, vanadium, zinc, ammonia, total residual chlorine, beryllium, mercury, silver, cyanide, chlordane, nickel and radium 226+228. We will also need to know the temperature of the discharge, its pH and its hardness (as Ca CO<sub>3</sub>). With the exception of mercury, chlordane and cyanide, all compounds should be measured in the "dissolved" state.

Bruce King  
Governor

Judith M. Espinosa  
Secretary

Ron Curry  
Deputy Secretary

.....  
Harold Runnels Building  
1190 St. Francis Drive  
P.O. Box 26110  
Santa Fe, NM 87502  
(505) 827-2850  
FAX (505) 827-2836





## ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Fife Symington, Governor Edward Z. Fox, Director

March 10, 1993  
REF: SWN93-007

Ron Talbot, Capital Improvements Engineer  
City of Flagstaff  
211 West Aspen Avenue  
Flagstaff, Arizona 86001

RE: Asphalt Storage and Disposal

Dear Mr. Talbot:

I am writing in response to your inquiry regarding the Arizona Department of Environmental Quality Solid Waste Unit's (SWU) position on asphalt storage and disposal.

At the present time, the SWU has had productive discussions with Aquifer Protection Permit Unit staff with respect to regulations governing asphalt.

It is the position of the SWU that asphalt is considered an inert material and therefore, is not regulated. No permit is required for the handling, storage or disposal of asphalt.

If you need further clarification or additional information, please do not hesitate to contact me at (602) 207-4121 or toll free in Arizona at (800) 234-5677 ext. 4121.

Sincerely,

A handwritten signature in cursive script that reads "Betsey Westell".

Betsey Westell  
Acting Unit Manager  
Solid Waste Unit  
Office of Waste Programs

cc: Krista Gooch  
NRO-Solid Waste Unit/OWP/ADEQ

Bill Engstrom, Manager  
Aquifer Protection Permit Unit/OWQ/ADEQ



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

March 10, 1993

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

ANITA LOCKWOOD  
CABINET SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-667-242-325**

Mr. David G. Griffin  
Superintendent of Environmental Affairs and Quality Control  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

**RE: TEMPORARY AUTHORIZATION TO DISCHARGE  
NAVAJO REFINERY  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Griffin:

The New Mexico Oil Conservation Division (OCD) has completed a review of your March 5, 1993 request for authorization to temporarily discharge from 0.8 to 1.6 acre-ft/day of approximately 3500 mg/l total dissolved solids Reverse Osmosis (RO) Reject Water onto a 40 acre agricultural plot adjacent to and owned by Navajo Refinery. The 40 acre plot is located in the SE 1/4, NW 1/4 of Section 9, T18S, R 26E NMPM Eddy County, New Mexico. The RO reject water results from the treatment of fresh feed water at the refinery. Navajo requests this temporary discharge authority only until Navajo's previous discharge plan modification request for the discharge of this waste water is approved. Ground water in the vicinity is at a depth of approximately 20 feet and has a total dissolved solids of 4500 mg/l.

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulation 3-106.B. you are hereby authorized to discharge, as requested in the above referenced correspondence, without an approved discharge plan for a period not to exceed 120 days from the date of initiation of the discharge with the following conditions:

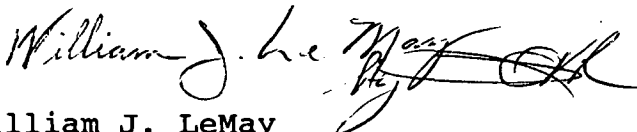
1. RO reject fluids will be applied to the plot such that ponding does not occur.
2. RO reject fluids will not be applied in the vicinity of the old waste water conveyance ditch.

Mr. David G. Griffin  
March 10, 1993  
Page 2

Please be advised that OCD authorization does not relieve you of liability should your operation result in actual pollution of surface waters, ground waters or the environment which may be actionable under other laws and/or regulations. In addition, this authorization does not relieve you of responsibility for compliance with other city, county, state and federal laws and/or regulations.

If you have any questions please, contact William Olson of my staff at (505)827-5885.

Sincerely,

  
William J. LeMay  
Director

WJL/WCO

xc : Mike Williams, OCD Artesia District Supervisor

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAW 9359

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

OIL CONSERVATION DIVISION  
RECEIVED  
(505) 746-6410

33 MAY 9 AM 8 35

March 5, 1993

Mr. Roger Anderson  
Environmental Bureau Chief  
Oil Conservation Division  
P O Box 2088  
Santa Fe NM 87501

*Fax received  
3/5/93*

RE: Emergency Discharge Request

Dear Mr. Anderson:

Navajo Refining Co. requests authorization to discharge Reverse Osmosis (RO) Reject Water onto a forty (40) acre site at Navajo's Artesia Refining Complex. Navajo has applied for a discharge permit covering this stream with both the OCD and EPA under the NPDES program. While awaiting these discharge permits, Navajo finds itself in an emergency situation with the Refinery's evaporation ponds at maximum permitted capacity. The Reverse Osmosis Unit reduces Navajo's process wastewater, which must go to the Evaporation Ponds, significantly (60%-75%). The RO reject water, which is better quality than some municipal drinking water supplies in New Mexico, is in the process of being permitted for direct discharge into Eagle Draw.

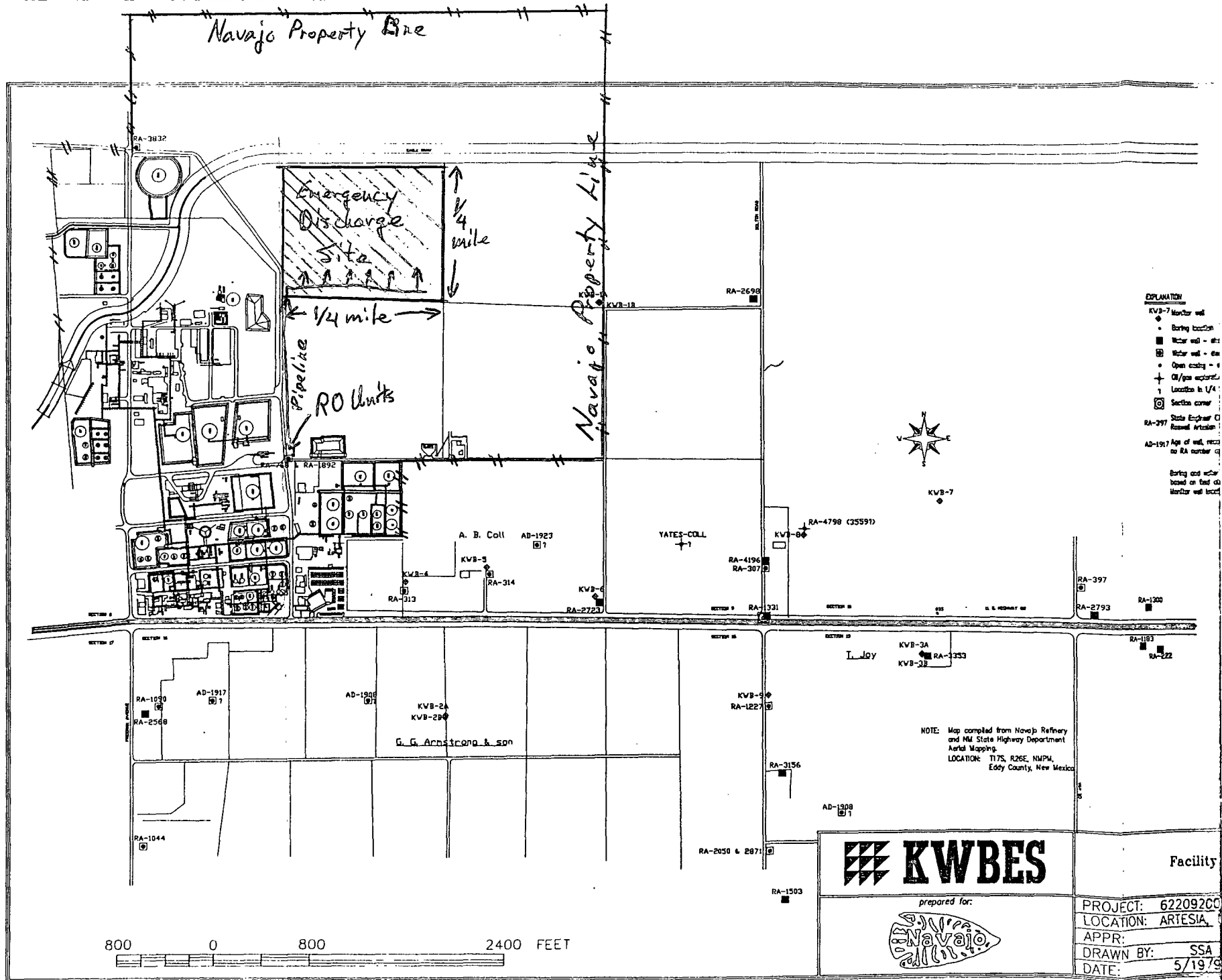
Navajo requests immediate authority to discharge this stream onto former farm land owned by Navajo. Two road crossing on Eagle Draw must be modified prior to discharge for public safety reasons, therefore, discharge onto this vacant farm plot appears to be the immediate solution to this short term problem.

The RO reject volumes are typically 0.8 acre ft/day with a maximum of 1.6 acre ft/day. The 40 acre site would therefore handle approximately 40 days of discharge to reach an equivalent to a typical irrigation event here in the Pecos Valley. This period of time should be sufficient to resolve the permitting and road crossing problems, but if not, Navajo has at least another 100 acres of vacant farm land. This other farm land is adjacent to the designated 40 acre plot, but is less than one quarter mile from Navajo's property boundaries. A plat is enclosed showing the proposed 40 acre site.

Sincerely,

David G. Griffin  
Supt. of Environmental  
Affairs and Q.C.

DGG/kds



BRUCE KING  
GOVERNOR

State of New Mexico

## ENVIRONMENT DEPARTMENT

JUDITH M. ESPINOSA  
SECRETARYRON CURRY  
DEPUTY SECRETARY

## TELECOPIER TRANSMITTAL

DATE: 3/4/93 TIME: \_\_\_\_\_ PAGE: 1 OF 6

PLEASE DELIVER THE FOLLOWING PAGES TO:

TO: Roger Anderson  
LOCATION: NMOCO  
TELEPHONE NUMBER: 827 5812  
TELECOPIER NUMBER: 827 5741FROM: Glen SAUMS  
LOCATION: NMED  
TELEPHONE NUMBER: 827 2827  
TELECOPIER NUMBER: 505-827-2836

## COMMENTS:

FYI Re: Navajo Ref.

[016/FAX FORM]



Harold Runnels Building • 1190 St. Francis Drive • P.O. Box 26110 • Santa Fe, New Mexico 87502



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

RECEIVED

MAR 3 1993

SURFACE WATER  
QUALITY BUREAU

FEB 25 1993

REPLY TO: 6W-ET

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (P 341 527 766)

Mr. Virgil R. Langford  
Vice President of Refining  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

Re: Administrative Order Docket No. VI-93-1153  
Facility No. NMP000015

Dear Mr. Langford:

Pursuant to Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318 et seq., the Environmental Protection Agency (EPA) has the authority to obtain information pertinent to carrying out its responsibilities under the CWA. Accordingly, the enclosed Order for Information is hereby served on you and the Navajo Refining Company.

Compliance with the provisions of this Order is expected within the maximum time periods established by each part of the Order. Your cooperation and prompt attention will be appreciated. In response hereto, please reference Docket No. VI-93-1153 and your NPDES facility number and send correspondence to the attention of Ms. Astrid Larsen (6W-ET). Failure to submit the information required by the Order could result in the issuance of an EPA administrative penalty order or referral to the United States Department of Justice for judicial action with monetary fines.



-2-

It is the policy of EPA to achieve full compliance with the NPDES permit program as rapidly as possible. This office is prepared to help you in any way it can. If you have any questions, please contact Ms. Astrid Larsen, EPA, Dallas, Texas at (214) 655-6454.

Sincerely yours,

/s/ Kerton Kirkpatrick  
Myron O. Knudson, P.E.  
Director  
Water Management Division (6W)

Enclosure

cc: Mr. Jim Piatt, Bureau Chief  
Surface Water Bureau  
New Mexico Environment Department

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 6

IN THE MATTER OF § DOCKET NO. VI-93-1153  
NAVAJO REFINING COMPANY §  
PROCEEDINGS UNDER SECTION 308 §  
(a)(4)(A), §  
CLEAN WATER ACT, §  
[33 U.S.C. § 1318(a)(4)(A)] § ORDER FOR INFORMATION  
In Re: Facility No. NMP00C015 §

The following FINDINGS are made and Order issued pursuant to the authority vested in the Administrator of the Environmental Protection Agency (EPA) by the above referenced statute (hereinafter the Act) and duly delegated to the Regional Administrator, Region 6, and duly redelegated to the undersigned Director, Water Management Division, Region 6.

I.

The Navajo Refining Company (hereinafter referred to as the "Respondent") is doing business in the State of New Mexico, the mailing address for which is P.O. Drawer 159, Artesia, New Mexico 88210.

II.

Section 308(a) of the Act, 33 U.S.C. § 1318(a) provides that: Whenever required to carry out the objective of this Act, including but not limited to ... determining whether any person is in violation of any ... limitation, prohibition

Docket No. VI-93-1153  
Page 2

... or standard of performance ... the Administrator shall require the owner or operator of any point source to ... provide such other information as he may reasonably require ....

### III.

#### FINDINGS OF FACT

EPA has received information of several potential discharges of noxious smelling materials into the city of Lovington's collection system.

### IV.

#### ORDER

Based on the foregoing FINDINGS OF FACT and pursuant to the authority vested in the Administrator under Section 308(a)(4)(A) of the Act, 33 U.S.C. § 1318 (a)(4)(A), and duly delegated to the Regional Administrator, Region 6, and duly redelegated to the undersigned Director, Water Management Division, Region 6, it is ordered:

That the Respondent, within thirty (30) days of the effective date of Order, shall submit the following information:

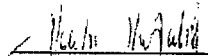
- 1) Results of all effluent sampling data (since initiation of discharge to the POTW) not limited to categorical standards;
- 2) Description of measures taken to control noxious odors.

Docket No. VI-93-1153  
Page 3

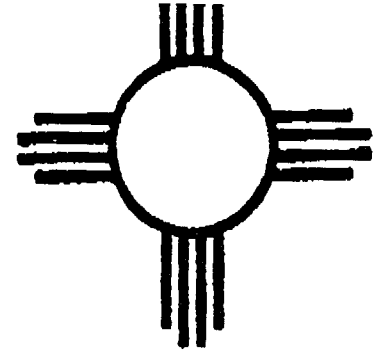
This information should be addressed to the Water Management Division, Enforcement Branch (6W-E), EPA, 1445 Ross Avenue, Dallas, Texas 75202-2733. It will be considered in any further evaluation of the nature and extent of the Respondent's noncompliance with the Clean Water Act. Section 309 of the Act, as amended by the Water Quality Act of 1987, provides civil and criminal penalties for failure to submit information required under Section 308 and criminal penalties for knowingly making a false statement under Section 308.

The effective date of this Order shall be the date it is received by the Respondent.

DATED: This FEB 25 1993 day of \_\_\_\_\_, 1993.

  
\_\_\_\_\_  
Myron O. Knudson, P.E.  
Director  
Water Management Division (6W)

PRC Environmental Management, Inc.  
2021 Girard Boulevard SE  
Suite 250  
Albuquerque, NM 87106  
505-246-9192  
Fax 505-246-9193

**PRC****FAX TRANSMITTAL**Date: Feb 16, 1993Total Pages: 7Project Number: 041-R262002

OPTIONAL FORM 99 (7-90)

**FAX TRANSMITTAL**# of pages = 7TO: RICH MAYERCompany: U.S. EPA Region 6Fax No: (214) 655-6460FROM: Frank RobinsonADDITIONAL COMMENTS: RICH

Here are the laboratory results from the domestic well PW-2723 and the Trip Blank NAV-11 that accompanied the sample to the laboratory.

The well we sampled at this residence was located on the east side of the property and used for domestic consumption. There was also an irrigation well on the north side of the property on the edge of a plowed field. KWSES guys identified the east side well as one they had previously sampled as 2723, and was marked as a shallow well on their figure 3-2 of their work plan.

The residents at this property are Hispanic and spoke no English. They are renters.

FR



**HALLIBURTON NUS**  
Environmental Corporation  
Environmental Laboratories

5350 Campbells Run Road  
Pittsburgh, PA 15205

900 Gormin Avenue  
Houston, TX 77058

February 03, 1993  
Report No.: 00022844  
Section A Page 5

LABORATORY ANALYSIS REPORT

CLIENT NAME: PRC ENVIRONMENTAL MGT  
ADDRESS: 2021 STIRARD BLVD. SE, SUITE 250  
ALBUQUERQUE, NM 87108-  
ATTENTION: BILL CASADEVALL

NUS CLIENT NO: 0882 0001  
WORK ORDER NO: 55000  
VENDOR NO: 10841302

SAMPLE ID: PM-2723  
NUS SAMPLE NO: H0228167  
P.O. NO.: 044-R20-2007

DATE SAMPLED: 22-JAN-93  
DATE RECEIVED: 25-JAN-93  
APPROVED BY: L. Beyer

LM	TEST CODE	DETERMINATION	RESULT	UNITS
I	OVTCM	TCL - VOLATILES		
		1,1,1-Trichloroethane	< 5	ug/L
		1,1,2,2-Tetrachloroethane	< 5	ug/L
		1,1,2-Trichloroethane	< 5	ug/L
		1,1-Dichloroethane	< 5	ug/L
		1,1-Dichloroethene	< 5	ug/L
		1,2-Dichloroethane	< 5	ug/L
		1,2-Dichloroethene (total)	< 5	ug/L
		1,2-Dichloropropane	< 5	ug/L
		2-Butanone	< 10	ug/L
		2-Hexanone	< 10	ug/L
		4-Methyl-2-pentanone	< 10	ug/L
		Acetone	< 10	ug/L
		Benzene	< 5	ug/L
		Bromodichloromethane	< 5	ug/L
		Bromoform	< 5	ug/L
		Bromomethane	< 10	ug/L
		Carbon disulfide	< 5	ug/L
		Carbon tetrachloride	< 5	ug/L
		Chlorobenzene	< 5	ug/L
		Chloroethane	< 10	ug/L
		Chloroform	< 5	ug/L
		Chloromethane	< 10	ug/L
		Dibromochloromethane	< 5	ug/L
		Ethylbenzene	< 5	ug/L
		Ethylene dibromide	< 5	ug/L
		Methylene chloride	< 5	ug/L
		Styrene	< 5	ug/L
		Tetrachloroethane	< 5	ug/L
		Toluene	9	ug/L
		Trichloroethane	< 5	ug/L
		Vinyl acetate	< 10	ug/L
		Vinyl chloride	< 10	ug/L



**HALLIBURTON NUS**  
Environmental Corporation  
Environmental Laboratories

5350 Campbelle Run Road  
Pittsburgh, PA 15205

900 Gemini Avenue  
Houston, TX 77058

February 03, 1993  
Report No.: 00022844  
Section A Page 6

LABORATORY ANALYSIS REPORT

CLIENT NAME: PRC ENVIRONMENTAL HST  
SAMPLE ID: PH-2723  
NUS SAMPLE NO: H0228167

LN	TEST CODE	DETERMINATION	RESULT	UNITS
		Xylene(total)	< 5	ug/L
		cis-1,3-Dichloropropene	< 5	ug/L
		tetra-Ethyl lead	#	ug/L
		trans-1,3-Dichloropropene	< 5	ug/L
3	OVZ	LIBRARY SEARCH - VOLATILES	Done	ug/L
4	OSVTCM	TCL - SEMIVOLATILE EXTRACTABLES		
		1,2,4-Trichlorobenzene	< 10	ug/L
		1,2-Dichlorobenzene	< 10	ug/L
		1,3-Dichlorobenzene	< 10	ug/L
		1,4-Dichlorobenzene	< 10	ug/L
		2,4,5-Trichlorophenol	< 50	ug/L
		2,4,6-Trichlorophenol	< 10	ug/L
		2,4-Dichlorophenol	< 10	ug/L
		2,4-Dimethylphenol	< 10	ug/L
		2,4-Dinitrophenol	< 50	ug/L
		2,4-Dinitrotoluene	< 10	ug/L
		2,6-Dinitrotoluene	< 10	ug/L
		2-Chloronaphthalene	< 10	ug/L
		2-Chlorophenol	< 10	ug/L
		2-Methylnaphthalene	< 10	ug/L
		2-Methylphenol	< 10	ug/L
		2-Nitroaniline	< 50	ug/L
		2-Nitrophenol	< 10	ug/L
		3,3'-Dichlorobenzidine	< 20	ug/L
		3-Nitroaniline	< 50	ug/L
		4,6-Dinitro-o-cresol	< 50	ug/L
		4-Bromophenylphenylether	< 10	ug/L
		4-Chloro-3-methylphenol	< 10	ug/L
		4-Chloroaniline	< 10	ug/L
		4-Chlorophenylphenylether	< 10	ug/L
		4-Methylphenol	< 10	ug/L
		4-Nitroaniline	< 50	ug/L
		4-Nitrophenol	< 50	ug/L
		Acenaphthene	< 10	ug/L
		Acenaphthylene	< 10	ug/L
		Anthracene	< 10	ug/L
		Benzo(a)anthracene	< 10	ug/L
		Benzo(a)pyrene	< 10	ug/L
		Benzo(b)fluoranthene	< 10	ug/L

5350 Campbell's Run Road  
Pittsburgh, PA 15205900 Gemini Avenue  
Houston, TX 77058February 03, 1993  
Report No.: 00022844  
Section A Page 7LABORATORY ANALYSIS REPORTCLIENT NAME: PRC ENVIRONMENTAL MGT  
SAMPLE ID: PM-2723  
NUS SAMPLE NO: H0228167

LN	TEST CODE	DETERMINATION	RESULT	UNITS
		Benzo(g,h,i)perylene	< 10	ug/L
		Benzo(k)fluoranthene	< 10	ug/L
		Benzoic acid	< 50	ug/L
		Benzyl alcohol	< 10	ug/L
		Butylbenzylphthalate	< 10	ug/L
		Chrysene	< 10	ug/L
		Di-n-butylphthalate	< 10	ug/L
		Di-n-octylphthalate	< 10	ug/L
		Dibenzo(a,h)anthracene	< 10	ug/L
		Dibenzofuran	< 10	ug/L
		Diethylphthalate	< 10	ug/L
		Diethylphthalate	< 10	ug/L
		Fluoranthene	< 10	ug/L
		Fluorene	< 10	ug/L
		Hexachlorobenzene	< 10	ug/L
		Hexachlorobutadiene	< 10	ug/L
		Hexachlorocyclopentadiene	< 10	ug/L
		Hexachloroethane	< 10	ug/L
		Indeno(1,2,3-cd)pyrene	< 10	ug/L
		Isophorone	< 10	ug/L
		N-Nitroso-di-n-propylamine	< 10	ug/L
		N-Nitrosodiphenylamine	< 10	ug/L
		Naphthalene	< 10	ug/L
		Nitrobenzene	< 10	ug/L
		Pentachlorophenol	< 50	ug/L
		Phenanthrene	< 10	ug/L
		Phenol	< 10	ug/L
		Pyrene	< 10	ug/L
		bis(2-Chloroethoxy)methane	< 10	ug/L
		bis(2-Chloroethyl)ether	< 10	ug/L
		bis(2-Chloroisopropyl)ether	< 10	ug/L
		bis(2-Ethylhexyl)phthalate	< 10	ug/L
6	AASA	Arsenic, Total (As)	< 0.003	ug/L
7	ASAM	Barium, Total (Ba)	< 0.1	ug/L
8	ACOM	Cadmium, Total (Cd)	< 0.005	ug/L
9	ACRM	Chromium, Total (Cr)	< 0.01	ug/L
10	APBA	Lead, Low Level (Pb)	< 0.002	ug/L
11	ANIM	Nickel, Total (Ni)	< 0.03	ug/L





**HALLIBURTON NUS**  
Environmental Corporation  
Environmental Laboratories

5350 Campbells Run Road  
Pittsburgh, PA 15205

900 Gemini Avenue  
Houston, TX 77058

February 03, 1993  
Report No.: 00022844  
Section A Page 8

LABORATORY ANALYSIS REPORT

CLIENT NAME: PRC ENVIRONMENTAL MGT  
SAMPLE ID: PM-2723  
NUS SAMPLE NO: HQ228167

LN	TEST CODE	DETERMINATION	RESULT	UNITS
12	ASEA	Selenium, Total (Se)	< 0.003	mg/L
13	DPACK	CLP Data Package Deliverable	Done	
28	OSVZ	LIBRARY SEARCH - SEMIVOLATILES	Done	ug/L

COMMENTS: \* This analyte was not detected by a computerized search of the chromatogram.



**HALLIBURTON NUS**  
Environmental Corporation  
Environmental Laboratories

5350 Campbells Run Road  
Pittsburgh, PA 15205

900 Gemini Avenue  
Houston, TX 77058

Trip Blank

February 03, 1993  
Report No.: 00022844  
Section A Page 17

LABORATORY ANALYSIS REPORT

CLIENT NAME: PRC ENVIRONMENTAL MGT  
ADDRESS: 2021 GIRARD BLVD. SE, SUITE 250  
ALBUQUERQUE, NM 87108-  
ATTENTION: BILL CASADEVILL

NUS CLIENT NO: 0682 0001  
WORK ORDER NO: 55880  
VENDOR NO: 10641302

SAMPLE ID: NAW-11 TB  
NUS SAMPLE NO: H0228170  
P.O. NO.: 044-R26-2007

DATE SAMPLED: 22-JAN-93  
DATE RECEIVED: 25-JAN-93  
APPROVED BY: L Beyer

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	OUTCH	TCL - VOLATILES		
		1,1,1-Trichloroethane	< 5	ug/L
		1,1,2,2-Tetrachloroethane	< 5	ug/L
		1,1,2-Trichloroethane	< 5	ug/L
		1,1-Dichloroethane	< 5	ug/L
		1,1-Dichloroethane	< 5	ug/L
		1,2-Dichloroethane	< 5	ug/L
		1,2-Dichloroethane(total)	< 5	ug/L
		1,2-Dichloropropane	< 5	ug/L
		2-Butanone	< 10	ug/L
		2-Hexanone	< 10	ug/L
		4-Methyl-2-pentanone	< 10	ug/L
		Acetone	< 10	ug/L
		Benzene	< 5	ug/L
		Bromodichloromethane	< 5	ug/L
		Bromoform	< 5	ug/L
		Bromomethane	< 10	ug/L
		Carbon disulfide	< 5	ug/L
		Carbon tetrachloride	< 5	ug/L
		Chlorobenzene	< 5	ug/L
		Chloroethane	< 10	ug/L
		Chloroform	< 5	ug/L
		Chloromethane	< 10	ug/L
		Dibromochloromethane	< 5	ug/L
		Ethylbenzene	< 5	ug/L
		Ethylene dibromide	< 5	ug/L
		Methylene chloride	< 5	ug/L
		Styrene	< 5	ug/L
		Tetrachloroethane	< 5	ug/L
		Toluene	< 5	ug/L
		Trichloroethane	< 5	ug/L
		Vinyl acetate	< 10	ug/L
		Vinyl chloride	< 10	ug/L

02/16/1993 16:11

M EPA REGION 6 HAZ WASTE DU TO

85058275741 P.07

**HALLIBURTON NUS**  
Environmental Corporation  
Environmental Laboratories5350 Campbells Run Road  
Pittsburgh, PA 15205900 Gomini Avenue  
Houston, TX 77068*Trip Blank*February 03, 1993  
Report No.: 00022844  
Section A Page 18LABORATORY ANALYSIS REPORTCLIENT NAME: PRC ENVIRONMENTAL MGT  
SAMPLE ID: NAW-11 TB  
NUS SAMPLE NO: H0228170

LN	TEST CODE	DETERMINATION	RESULT	UNITS
		Xylene(total)	< 5	ug/L
		cis-1,3-Dichloropropene	< 5	ug/L
		tetra-Ethyl lead	0	ug/L
		trans-1,3-Dichloropropene	< 5	ug/L
3	OVZ	LIBRARY SEARCH - VOLATILES	Done	
4	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: \* This analyte was not detected by a computerized search of the chromatogram.

February 11, 1993

David G. Griffin  
Superintendent Environmental  
Affairs & Quality Control  
Navajo Refinery  
P.O. Drawer 159  
Artesia, New Mexico 88210

Dear Mr. Griffin:

I have reviewed your letter of January 22, 1993 concerning wastes from Navajo Refinery which were sent to the Artesia Landfill for disposal. The following comments are provided for your information.

1. The intent of the Solid Waste Management Regulations was to exempt wastes generated by your facility from the definition of solid waste but at the same time prohibit them from disposal at municipal solid waste landfills. Such wastes are under the jurisdiction of the OCD and must be disposed of at OCD approved sites.
2. The exclusion provisions in Section 107 included petroleum wastes but the definition of petroleum wastes did not extend to the refinery process. This was an oversight and will be corrected in future revisions to the regulations.
3. In the interim, all wastes generated at your facility must be considered hazardous wastes with the exception of normal lunchroom and office refuse generated at the facility. The refinery is required to demonstrate the waste taken to the landfill are not hazardous in nature by the use of the TCLP tests.
4. The Department does not recommend disposal of the wastes from the refinery at the Artesia landfill as the landfill is not in a very good location and may have difficulty in getting permitted in the future. Solid wastes going into the landfill should be restricted to minimize the possibility of groundwater contamination.
5. The asphalt cannot be brought into the landfill in a liquid state as liquids are prohibited by the Solid Waste Management Regulations. The Department is willing to consider continued disposal of the solid asphalt at the landfill provided Navajo Refinery provides an analysis to demonstrate it is non hazardous.

Bruce King  
Governor

Judith M. Espinosa  
Secretary

Ron Curry  
Deputy Secretary

Harold Runnels Building  
1190 St. Francis Drive  
P.O. Box 26110  
Santa Fe, NM 87502  
(505) 827-2850  
FAX (505) 827-2836

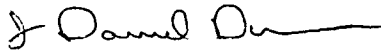


David G. Griffin  
February 11, 1993  
Page 2

6. It is my understanding that the OCD must approve the plan for disposal of all wastes generated by the refinery. I suggest you contact Roger Anderson at OCD to investigate other alternatives for disposal.

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

Sincerely,



J. David Duran  
Program Manager  
Permitting and Compliance  
Solid Waste Bureau

JDD/rg

cc: David M. Vackar, Director, Environmental Protection Div.  
Gerald Silva, Chief, Solid Waste Bureau  
Fred Bennett, Field Office Roswell  
Roger Anderson, OCD  
Thomas L. Howell, City Manager, Artesia



**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
Ecological Services  
Suite D, 3530 Pan American Highway, NE  
Albuquerque, New Mexico 87107**

OIL CONSERVATION DIVISION  
RECEIVED  
93 JAN 14 AM 9 43

January 13, 1992

GW-93002

Mr. William J. Lemay  
Director, State of New Mexico  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Dear Mr. Lemay:

This responds to the notice of publication received by the U.S. Fish and Wildlife Service (Service) on December 21, 1992, regarding the Oil Conservation Division discharge permits GW-28 and GW-49, effects on fish, shellfish, and wildlife resources in New Mexico.

The Service has determined there are no wetlands or other environmentally sensitive habitats, plants, or animals that will be adversely affected by the following discharge.

GW-49, El Paso Natural Gas Company, Blanco Compressor Station located in the N/2, Section 14, T29N, R11W, NMPM, Farmington, New Mexico.

The Service has the following comments on the issuance of the following discharge permit:

GW-28, Navajo Refining Company, Artesia Refinery proposes to modify its discharge plan. The proposed modification consists of the addition of a reverse osmosis (RO) unit to treat raw makeup water for process feed water. Navajo Refining Company proposes to discharge the reject water from the RO unit directly into Eagle Draw at a point in the NE/4, NE/4, SE/4, Section 8, T17S, R26E, Eddy County, New Mexico. Approximately 600,000 gallons per day of reject water with a total dissolved solids concentration of approximately 3,747 mg/l will be discharged into Eagle Draw for disposal.

The Service objects to the issuance of this discharge permit because of the following reasons:

1. Eagle Draw is considered to be a water of the United States, and would require an NPDES permit to be issued through the U.S. Environmental Protection Agency, Region 6, in Dallas, Texas.
2. Total dissolved solids of 3,747 mg/l exceed the New Mexico Water Quality Standards of 1,000 mg/l.

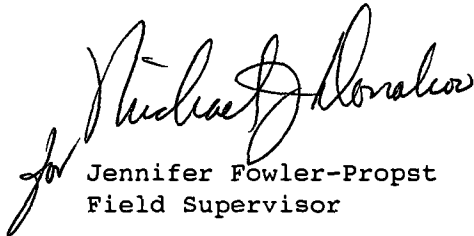
3. The Service is concerned about the effect on Threatened and Endangered species located in the Pecos River, a direct recipient of water from Eagle Draw.

The Service is the Federal agency responsible for the protection of migratory birds and endangered species. Please note the following legal mandates.

1. Endangered Species Act of 1973, as amended. Section 9 prohibits any "take" (harass, harm, pursue, hunt, shoot, would, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of listed species without a special exemption. Harm is further defined to include specific habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.
2. Migratory Bird Treaty Act. Section 703 prohibits anyone at anytime or in any manner to capture, transport, or kill any migratory birds unless permitted by regulations promulgated under it. If migratory birds become exposed to and/or accumulated harmful levels of contaminants, this constitutes "take" under the Act. The courts have stated the Act can be constitutionally applied to impose penalties to persons, associations, partnerships, or corporations which did not intend to "kill" migratory birds and that the Act includes poisoning by any means. The unlawful killing of even one migratory birds is an offense.

If you have any questions concerning our comments, please contact Mary Orms at (505) 883-7877.

Sincerely,

  
Jennifer Fowler-Propst  
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico  
Regional Administrator, U.S. Environmental Protection Agency, Dallas, Texas

TELEPHONE  
(505) 748-3311

OIL CO.



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

EASYLINK  
62905278

FAX  
(505) 746-6410

'93 JAN 13 AM 9 27

ARTESIA, NEW MEXICO 88210

January 8, 1993

Mr. Fredrick H. Bennett  
Environmental Specialist  
Permitting & Compliance Section  
Solid Waste Bureau  
N. M. Environment Department  
315 North Atkinson  
Roswell, NM 88201

RE: WASTES TAKEN TO ARTESIA LANDFILL

Dear Mr. Bennett:

Per your request, a search of our manifest records concerning materials Navajo transported to the City of Artesia Landfill indicates that the soils shipped were almost exclusively contaminated with asphalt. Navajo sent no sludges at all and the Petroleum containing wastes sent to the Landfill consisted of sample cans and drums filled with asphalt. By definition, Navajo produces no special wastes with the possible exception of residues from a spill of finished products, none of which was sent to the City Landfill.

A thorough reading of the New Mexico Solid Waste Management Regulations appears to have left Navajo, the other petroleum refineries, and perhaps others exempted from the Solid Waste Management Regulations, except for those waste streams, such as office trash, etc., which clearly fit the definition of solid wastes. This leaves Navajo puzzled as what to do with some wastes, such as sample cans and drums of asphalt, catalyst (FCC catalyst fines, hydrodesulfurizer catalyst and ceramic catalyst support media), and spent filter media, which are all non-hazardous wastes. The federal waste regulations call these waste streams solid wastes, but New Mexico's Solid Waste Regulations exempt them from being solid waste since they are non-domestic wastes associated with the refinement of crude oil. This same exemption prevents these wastes from being special wastes, since special wastes are solid wastes - with unique requirements. These exempt wastes are also not petroleum wastes, since they are not liquids or sludges associated with exploration or production.

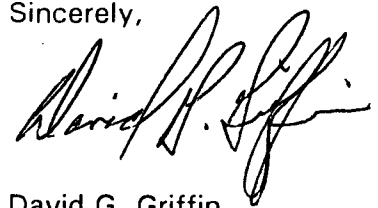
Interestingly, Navajo has found no language in the regulations that prevent non-hazardous exempt/non-solid wastes from being disposed of in a permitted solid waste facility. The composition and nature of these wastes pose no threat to human health or the environment when disposed of in a solid waste landfill. Asphalt is a solid petroleum product which won't leach, decompose or contaminate ground water, and is acceptable to solid waste facilities in the form of asphalt roofing debris and highway construction rubble. The catalysts Navajo needs to dispose of are solid alumina-silica matrix materials that have been tested and shown non-hazardous. The same is also true of the spent filter media which consists of clay, bauxite, salt or activated carbon.



Mr. Fredrick H. Bennett  
N. M. E. D.  
Page 2

Navajo requests that these specific exempt/non-solid wastes be designated as acceptable wastes for disposal at a solid waste landfill. It is bad enough that New Mexicans must export their special solid wastes to neighboring states at significant cost, we don't need to exclude wastes from appropriate local disposal due to oversights or omissions in the regulations.

Sincerely,

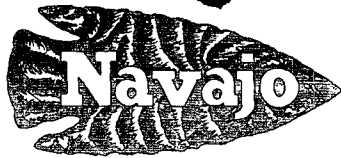
A handwritten signature in black ink, appearing to read "David G. Griffin". The signature is fluid and cursive, with a large, stylized "G" and "F".

David G. Griffin  
Supt. Environmental  
Affairs & Quality Control

DGG/pb

cc: Tommy Howell - City of Artesia  
Roger Anderson - OCD

TELEPHONE  
(505) 748-3311



# REFINING COMPANY

501 EAST MAIN STREET © P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

FAX  
(505) 746-6410

OIL CONSERVATION DIVISION

RECEIVED

'93 JAN 11 AM 8 53

January 7, 1993

Roger Anderson  
Energy, Minerals and  
Natural Resources Dept.  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, N.M. 87504

Re: Water Permit  
Amendment GW-28

Dear Roger:

Enclosed you will find a copy of USEPA's notice of completeness of Navajo's ND PES permit request.

Discussions with EPA concerning this document indicate that:

1. They find no significant problem with our request;
2. The actual permit may be four or more years in processing;
3. If we proceed to discharge they want testing on a regular basis (bi-annual);
4. If they had noted any problem such as a hazardous constituent they would advise waiting on the permit and would have moved our permit up on the priority list.

We are looking forward to meeting with you at your convenience if needed or we will appear at a hearing if one is required.

Please advise if you wish further information.

Sincerely,

Ronald S. Loyd  
Regulatory Specialist

RSL/te

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202-2733**

December 23, 1992

REPLY TO: 6W-PS

Mr. Ron Loyd  
Navajo Refining Co.  
PO Drawer 159  
Artesia, NM 88211-0159


Re: NPDES Application No. NM0030074 - Navajo Refining Co.

Dear Mr. Loyd:

Your application for a NPDES permit was received and, in accordance with the Environmental Permit Regulations, (40 CFR 124.3(c), 54 FR 18785, May 2, 1989), was reviewed and determined to be administratively complete on December 15, 1992. Please note that at the time your permit is processed for issuance, we may request additional information including effluent testing. .

Thank you for your cooperation. If you have questions concerning this submittal, please contact me at (214) 655-7518.

Sincerely,



Jackie Greensage  
Environmental Protection Assistant  
Permits Issuance Section (6W-PS)

AFFIDAVIT OF PUBLICATION

No. 31006

STATE OF NEW MEXICO,  
County of San Juan:

KIT OWENS being duly  
sworn, says: "That she is the  
ADVERTISING DIRECTOR of  
The Farmington Daily Times, a daily  
newspaper of general circulation  
published in English in Farmington,  
said county and state, and that the  
hereto attached LEGAL NOTICE

was published in a regular and entire  
issue of the said Farmington Daily  
Times, a daily newspaper duly quali-  
fied for the purpose within the  
meaning of Chapter 167 of the 1937  
Session Laws of the State of New  
Mexico for ONE consecutive  
(days) (//////) on the same day as  
follows:

First Publication FRIDAY, JANUARY 1, 1993

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_

and the cost of publication was \$ 39.38



Subscribed and sworn to before me  
this 15<sup>th</sup> day of  
JANUARY, 1993.

Ginny Beck  
Notary Public, San Juan County,  
New Mexico

My Comm expires: April 2, 1996

COPY OF PUBLICATI

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO ENERGY, MINERALS AND  
NATURAL RESOURCES DEPARTMENT OIL CON-  
SERVATION DIVISION

Notice is hereby given that pursuant to New Mexico  
Water Quality Control Commission Regulations, the fol-  
lowing discharge plan modification applications have  
been submitted to the Director of the Oil Conservation  
Division, State Land Office Building, P.O. Box 2088,  
Santa Fe, New Mexico 87504-2088, Telephone (505)  
827-5800:

(GW-28) - Navajo Refining Company, Virgil R.  
Langford, Vice President of Refining, 501 East Main  
Street, Artesia, New Mexico 88210, has submitted an  
application to modify it previously approved discharge  
plan for their Artesia Refinery located in the SE/4,  
Section 1, E/2 Section 8, W/2 Section 9, N/2 Section  
12, Township 17 South, Range 26 East, NMPM, Eddy  
County, New Mexico. The proposed modification con-  
sists of the addition of a reverse osmosis (RO) unit to  
treat raw makeup water for process feed water. Navajo  
Refining Company proposes to discharge the reject  
water from the RO unit directly into Eagle Draw at a  
point in the NE/ NE/ 8E/, Section 8, Township 17 South,  
Range 26 East. Approximately 600,000 gallons per day  
of reject water with a total dissolved solids concentra-  
tion of approximately 377 mg/l will be discharged into  
Eagle Draw for disposal. Groundwater most likely to be  
affected by an accidental discharge is at a depth of  
approximately 15 feet with a total dissolved solids con-  
centration ranging from 1500 mg/l to 2500 mg/l. The  
discharge to Eagle Draw is a discharge to a water of  
the U.S. and also requires an NPDES permit issued  
through U8EPA Region 6, 145 Ross Avenue, Dallas,  
Texas 75202.

(GW-49) - El Paso Natural Gas Company, Anu Pundari,  
Sr. Compliance Engineer, P.O. Box 990, Farmington,  
New Mexico 87499, has submitted an application to  
modify their previously approved discharge plan for  
their Blanco Compressor Station located in the N/2,  
Section 1, Township 29 North, Range 11 West, NMPM,  
San Juan County, New Mexico. The proposed modifica-  
tion consist of increasing the total waste water treat-  
ment plant from 57000 gallons per day to 173000 gal-  
lons per day. The increase in flow will be accompanied  
by a decrease in the total dissolved solids concentration  
in the wastewater from 1000 mg/l to less than 500 mg/l.  
Groundwater most likely to be affected by an accidental  
discharge is at a depth of approximately 50 feet with a  
total dissolved solids concentration of approximately  
1600 mg/l. The discharge plan addresses how spills,  
leaks, and other accidental discharges to the surface  
will be managed.

Any interested person may obtain further information  
from the Oil Conservation Division and may submit writ-  
ten comments to the

Director of the Oil Conservation Division at the  
address given above. The discharge plan modification  
applications may be viewed at the above address  
between 8:00 a.m. and 4:00 p.m., Monday through  
Friday. Prior to ruling on any proposed discharge plan  
or its modification, the Director of the Oil Conservation  
Division shall allow at least thirty (30) days after the  
date of publication of this notice during which com-  
ments may be submitted to him and public hearing may  
be requested by any interested person. Requests for  
public hearing shall set forth the reasons why a hearing  
should be held. A hearing will be held if the Director

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of December, 1992.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION  
WILLIAM J. LEMAY, Director

SEAL

Legal No. 31006 published in the Farmington Daily Times, Farmington, New Mexico on Friday, January 1, 1993.

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS AND  
NATURAL RESOURCES  
DEPARTMENT

STATE OF NEW MEXICO  
County of Bernalillo

SS

Thomas J. Smithson being duly sworn declares and says that he is National Advertising manager of the Albuquerque Journal, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for.....1.....times, the first publication being on the.....30.....day  
of December....., 1992, and the subsequent consecutive  
publications on....., 1992.

*Thomas J. Smithson*

Sworn and subscribed to before me, a Notary Public in  
and for the County of Bernalillo and State of New  
Mexico, this .....30..... day of.....December....., 1992.

PRICE.....\$ 35.71

Statement to come at end of month.

ACCOUNT NUMBER.....081184

CLA-22-A (R-12/92)



OFFICIAL SEAL

*Bernadette Ortiz*  
BERNADETTE ORTIZ

NOTARY PUBLIC-NEW MEXICO

FILED WITH SECRETARY OF STATE

Commission Expires 12-18-93

OIL CONSERVATION DISTRICT  
Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe, New Mexico 87504-2088, Telephone 505-827-5800:

(GW-28) - Navajo Refining Company, Virgil R. Langford, Vice President of Refining, 501 East Main Street, Artesia, New Mexico 88210, has submitted an application to modify its previously approved discharge plan for their Artesia Refinery located in the SE/4, Section 1, E/2 Section 8, W/2 Section 9, N/2 Section 12, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico. The proposed modification consists of the addition of a reverse osmosis (RO) unit to treat raw makeup water for process feed water. Navajo Refining Company proposes to discharge the reject water from the RO unit directly into Eagle Draw at a point in the NE/4 NE/4 SE/4, Section 8, Township 17 South, Range 28 East. Approximately 800,000 gallons per day of reject water with a total dissolved solids concentration of approximately 3747 mg/l will be discharged into Eagle Draw for disposal. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 15 feet with a total dissolved solids concentration ranging from 1800 mg/l to 2500 mg/l. The discharge to Eagle Draw is a discharge to a water of the U.S. and also requires an NPDES permit issued through USEPA Region 6, 445 Ross Avenue, Dallas, Texas, 75202.

(GW-49) - El Paso Natural Gas Company, Anu Pundari, Sr. Compliance Engineer, P.O. Box 4890, Farmington, New Mexico 87499, has submitted an application to modify their previously approved discharge plan for their Blanco Compressor Station located in the 2, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The proposed modification consists of increasing the total waste water discharging to the City of Bloomfield wastewater treatment plant from 57000 gallons per day to 30000 gallons per day. The increase in flow will be accompanied by a decrease in the total dissolved solids concentration in the wastewater from 1000 mg/l to less than 500 mg/l. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 1800 mg/l. The discharge plan addresses how pits, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of Oil Conservation Division at the address given above. The discharge application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for publishing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

# Affidavit of Publication

No. 14167

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks on the same day as follows:

First Publication December 29, 1992

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_

Gary D. Scott  
Subscribed and sworn to before me this 29th day of December 1992

Barbara Ann Beans  
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

# Copy of Publication

State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800: (GW-28) - Navajo Refining Company, Virgil R. Langford, Vice President of Refining, 501 East Main Street, Artesia, new Mexico 88210, has submitted an application to modify its previously approved discharge plan for their Artesia Refinery located in the SE/4, Section 1, E/2 Section 8, W/2 Section 9, N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. The proposed modification consists of the addition of a reverse osmosis (RO) unit to treat raw makeup water for process feed water. Navajo Refining Company proposes to discharge the reject water from the RO unit directly into Eagle Draw at a point in the NE/4 NE/4 SE/4, Section 8, Township 17 South, Range 26 East. Approximately 600,000 gallons per day of reject water with a total dissolved solids concentration of approximately 3747 mg/l will be discharged into Eagle Draw for disposal. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 15 feet with a total dissolved solids concentration ranging from 1500 mg/l to 2500 mg/l. The discharge to Eagle Draw is a discharge to a water of the U.S. and also requires an NPDES permit issued through USEPA Region 6, 1445 Ross

Avenue, Dallas, Texas 75202. (GW-49) - El Paso Natural Gas Company, Anu Pundari, Sr. Compliance Engineer, P.O. Box 4990, Farmington, New Mexico 87499, has submitted an application to modify their previously approved discharge plan for their Blanco Compressor Station located in the N/2, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The proposed modification consists of increasing the total waste water discharging to the City of Bloomfield wastewater treatment plant from 57000 gallons per day to 173000 gallons per day. The increase in flow will be accompanied by a decrease in the total dissolved solids concentration in the wastewater from 1000 mg/l to less than 500 mg/l. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 1600 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed. Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan modification applications may be viewed at the above address between

8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest. If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing. GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of December, 1992.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION  
s-William J. LeMay  
WILLIAM J. LEMAY,  
Director

SEAL  
Published in the Artesia Daily Press, Artesia, N.M. December 29, 1992.

Legal 14167

**NOTICE OF PUBLICATION**  
**STATE OF NEW MEXICO**  
**ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT**  
**OIL CONSERVATION DIVISION**

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan modification applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

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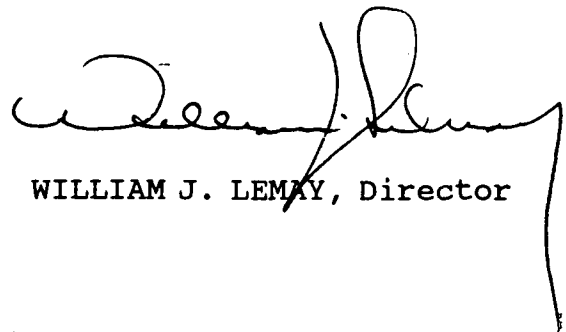


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If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of December, 1992.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in dark ink, appearing to read "William J. Lemay", is written over the printed name. The signature is fluid and cursive, with a large loop at the end.

WILLIAM J. LEMAY, Director

S E A L

TELEPHONE  
H (505) 748-3311



REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 59

ARTESIA, NEW MEXICO 88210

EASYLINK

62905278

OIL CONSERVATION DIVISION

RECEIVED FAX  
(505) 746-6410

52 DE 11 PM 1 30

December 10, 1992

Roger Anderson  
Energy, Minerals and  
Natural Resources Dept.  
P.O. Box 2088  
Santa Fe, N.M. 87504

Re: Discharge Plan GW28

Dear Roger:

Navajo Refining Company hereby requests an amendment to the above referenced discharge plan. The amendment would allow for discharge of reject water from a reverse osmosis treatment facility to Eagle Draw at a point North of our present trickling filter.


An analysis of the RO reject water is attached for your information along with a copy of Navajo's NDPES permit request.

Total anticipated discharge of RO project would be 600,000 gallons per day.

Your early response to this request would be appreciated due to the fact that this water project is related to additional water issues at Navajo's facility. Plans are in progress to install and activate leased equipment by February 1, 1993.

Please call if you have questions concerning the permit amendment.

Sincerely,

  
Virgil R. Langford  
Vice President of Refining

VRL/te

Encl.



State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION



Telephone



Personal

Time

0800

Date

12/1/92

Originating Party

Other Parties

Ron Shannon - EPA Region VI  
(214) 655-6745 RCRA

Bill Olson - OCD

Subject

Navajo Refinery

Discussion

Navajo asked for meeting with EPA on ponds & old ditch to ponds

Meeting set for 12/9/92 in Dallas

Requested OCD to attend since involved with D.P. and site remediation

Requested copy of recent OCD letter on Navajo site investigation

Conclusions or Agreements

OCD can't attend meeting

Will send copy of OCD letter (fax # (214) 655-6460)

Distribution

file

Signed

Bill Olson

Navajo / OCD Meeting 11/13/92 10:00 am

attendees - Bill Olson } OCD  
Roger Anderson }  
Ron Lylocl } Navajo  
Dave Griffin }

Laurent 11/9/92 document on RO

Re: NPDES discharge of RO concentrate

OCD can give D.P. modification but discharge  
still cannot occur without NPDES permit

Navajo may want to apply for D.P. modification  
to discharge to RO effluent to ponds while  
waiting for NPDES permit



State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone	<input type="checkbox"/> Personal	Time 0800	Date 11/12/92
---	-----------------------------------	-----------	---------------

<u>Originating Party</u>	<u>Other Parties</u>
Darrell Moore - Navajo Refining	Bill Olson - OCP

Subject

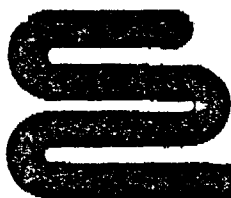
Navajo Offsite Sampling

Discussion

Navajo plans to sample the private well, and perform quarterly sampling on 11/16/92

Conclusions or Agreements

<u>Distribution</u> file	<u>Signed</u> Bill Olson
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11/9/92  
Navajo / OCO  
10:00 am

ECOLOCHEM® INC. 11689 PACIFIC AVENUE • P.O. BOX 488 • FONTANA, CALIFORNIA 92335 • 714/681-5555

November 9, 1992

Scott Beardemphl  
Operations Superintendent  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88210

Via Telecopier &  
First Class Mail  
(505) 748-9077

Dear Scott,

Enclosed please find our quotation for the Reverse Osmosis Systems you requested. As per our meeting last Wednesday we have included options for a long term RO operating contract (three years) and also for a three month RO test. The primary benefit that appears to accrue to Navajo by an Ecolochem Reverse Osmosis systems would be the potential for a large reduction of cost in wastewater treatment. To insure reliability and ease of operation, both options include the benefit of a college degree Field Service Representative for comprehensive system operation.

Enclosed in this package please find the computer analysis of the raw, feed, product and reject water streams that will be produced by the RO unit. Also enclosed in this package are drawings and engineering schematics for our MobileRO® systems which will aid in the installation process. The installation of these systems can be done by Navajo or by Ecolochem, at your option. The cost of the installation by Ecolochem would be determined on a site visit by our project manager. These installation costs may be spread out over the first twelve months of the long term option.

The delivery of these units is dependent on the time your order is received. We propose the delivery of two 200 gpm units immediately and two within thirty days.

If you desire a reference list of customers that have utilized our MobileRO® system and services we will gladly provide that for you. Also if you would like to visit one of these sites we can arrange a tour to fit your schedule.

Scott Dearden  
Navajo Refining Company  
November 9, 1992  
Page 2

I will call you on Tuesday to answer any remaining questions you may have concerning this quotation. Please do not hesitate to call me directly if you any questions that need attention before then.

Very truly yours,

ECOLOCHEM, INC.



Ronald K. Gamble  
Area Sales Representative *mb*

Enclosures

# Quotation

**ECOLOCHEM®**, INC.

To: **NAVAJO REFINING COMPANY**  
P.O. Drawer 159  
Artesia, NM 88210

Quote date: November 9, 1992

Quote number: 1

Reference number:

Attention: **Scott Beardemphl, Operations Superintendent**

Job: **Reverse Osmosis (three year operating contract)**

Delivery date: **As Requested**

Quantity	Description	Total
	Furnish, deliver and operate, as requested, an Ecolochem water treatment system.	
	3 Year Reverse Osmosis Operating Contract	See Exhibit A-1
	3 Month Reverse Osmosis Test	See Exhibit A-2
	Other	See Addenda
	Service available 24 hours per day, 7 days per week, 365 days per year. Call 1-800-446-8004 toll-free.	
	Total	

Unless otherwise noted this quotation is valid for a period of 30 days from quote date.  
Any and all federal, state or local taxes will be added to this total.

**THIS QUOTATION SUBJECT TO ALL TERMS AND CONDITIONS SHOWN ON OTHER SIDE.**

FOB: Destination

Terms: Net 30 Days

*Handwritten Signature*

For Ecolochem, Inc. *(Signature)*

Acceptance

For Customer

Originates from: ☐ 4545 PATENT ROAD • P.O. BOX 12775 • NORFOLK, VIRGINIA 23507 • 804/855-9000  
☐ 13030 PLAYER STREET • P.O. BOX 45881 • HOUSTON, TEXAS 77045 • 713/773-5000  
☐ 2855 N.W. 75TH AVENUE • P.O. BOX 522900 • MIAMI, FLORIDA 33152 • 305/597-1000  
☐ 6581 ROMISS COURT • P.O. BOX 5976 • ST. LOUIS, MISSOURI 63134 • 314/521-4000  
☒ 11689 PACIFIC AVENUE • P.O. BOX 488 • FONTANA, CALIFORNIA 92335 • 714/681-5555  
☐



**TERMS AND CONDITIONS**

ECOLOCHEM, INC., a Virginia, U.S. corporation ("ECOLOCHEM"), and

**NAVAJO REFINING COMPANY**

("Customer") agree:

**1. ECOLOCHEM SERVICES**

When Customer has fully complied with Paragraph 2 below, ECOLOCHEM shall:

- A. Provide the equipment shown on this Quotation (the "Equipment"), or at ECOLOCHEM's option, other equipment sufficient to meet Customer's requirements for treated water or other fluids ("Effluent Water").
- B. Treat Customer's influent water or other fluids ("Influent Water") to the quality specified on this Quotation or on an attached exhibit (the "Service").
- C. Use its best efforts, at all times, to provide the Equipment, but shall not be liable for any delays in doing so.
- D. Provide a standard Certificate of Insurance, listing general liability, automobile and workman's compensation coverage.

**2. CUSTOMER'S RESPONSIBILITIES**

As a condition precedent to ECOLOCHEM's providing the Service, Customer shall, without cost to ECOLOCHEM throughout the Quotation term:

- A. Provide a location at Customer's facilities, suitable for the Equipment.
- B. Provide fire hoses, fittings, electricity and other specified equipment and services as required.
- C. Provide Influent Water of the quality described on this Quotation or an attached exhibit, at the pressure and at the flow rate required by ECOLOCHEM.
- D. Provide reasonable access to and security for the Equipment.
- E. Provide all necessary utilities to operate the Equipment.
- F. Provide all necessary licenses or permits required for the installation and operation of the Equipment required for the Service.

**3. PRICE**

The price and payment terms for ECOLOCHEM's Service are set forth on this Quotation. Any supplemental cost incurred by ECOLOCHEM in the performance of any of Customer's responsibilities under Paragraph 2 shall be reimbursed. Interest on all past due amounts will be added in accordance with state law.

**4. WATER QUALITY WARRANTY**

Effluent Water quality shall meet or exceed the specifications shown on this Quotation or an attached exhibit. Any Effluent Water not meeting these specifications shall, at ECOLOCHEM's option, be replaced or reprocessed at no additional cost to Customer, unless the failure is caused by the acts or omission of Customer.

ECOLOCHEM warrants only that the Equipment is capable of processing the Influent Water, described on this Quotation or on an attached exhibit, to meet the specifications of the Effluent Water shown on this Quotation or an attached exhibit. ECOLOCHEM does not warrant the USE of the Effluent Water and, accordingly, such replacement or reprocessing shall be the Customer's sole and exclusive remedy.

**EXCEPT AS EXPRESSLY SET FORTH IN THIS SECTION, ECOLOCHEM MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR OF FITNESS OF USE OR FOR THE PURPOSE INTENDED.**

Effluent Water is neither intended nor suitable for human consumption.

**5. MUTUAL LIMITATION OF LIABILITY**

Customer shall not be liable in contract or in tort (including negligence) to ECOLOCHEM for incidental or consequential damages. ECOLOCHEM shall not be liable in contract or in tort (including negligence) to Customer for incidental or consequential damages, including, but not limited to, damages to or loss of Customer's property or equipment, loss of profits, loss of production, costs of purchased or replacement equipment, cost of capital or overhead, loss of revenue, loss of anticipated profits, claims of Customer's customers for interruptions or cost of replacing Customer's product resulting from ECOLOCHEM's performance or nonperformance of its obligations under this Quotation.

**6. POSTPONEMENT OF PERFORMANCE**

The consequences, direct or indirect, of labor troubles, fires, accidents, weather, equipment failures, war, failure of supply of raw materials and any causes beyond the control of the parties to this Quotation shall excuse performance to the extent performance has been prevented by such consequences. At the removal of the cause of interruption, performance shall be resumed fully in accordance with this Quotation.

In the event ECOLOCHEM cannot provide the Service to meet Customer's requirements, Customer may utilize other sources to obtain Effluent Water until ECOLOCHEM can meet its obligations under this Quotation. ECOLOCHEM shall not be liable for any difference in the cost.

ECOLOCHEM's failure to provide the Service shall not result in termination of this Quotation. However, should Customer request the Service and ECOLOCHEM not be able to provide the Service for a period in excess of 30 days, this Quotation will automatically terminate.

**7. INTERPRETATION**

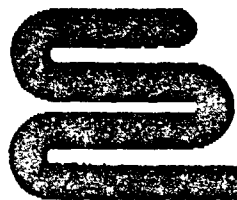
The parties intend this Quotation, with any exhibits and addenda, as a final expression of their agreement and a complete and exclusive statement of its terms. No course of previous dealings between the parties and no usage of trade shall be relevant or admissible to supplement, explain or vary any of its terms. No representations, understandings or agreements have been made or relied on in this Quotation other than expressly set forth. This Quotation may be modified only by a writing signed by the parties or their duly authorized agents.

**This Quotation shall be governed by and shall be construed according to the internal laws of the Commonwealth of Virginia, applicable to contracts made and to be performed wholly with the Commonwealth of Virginia.****8. NOTICE**

Notice of requirements for the Service shall be made by calling ECOLOCHEM's 24 hour/7 day, toll-free number in Norfolk, Virginia (800) 446-8004 or by facsimile transmission to (804) 855-1478. All other notices required under this Quotation shall be sent by registered or certified mail, return receipt requested, postage paid, to the address shown on the reverse side, or at such other address as either party shall designate in writing.

**9. SEVERABILITY**

If any provision of this Quotation shall be held invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall in no way be affected or impaired.



ECOLOCHEM®

Exhibit A-1

Reference # \_\_\_\_\_

Customer: NAVAJO REFINING COMPANY

Delivery Address: Artesia, NM

### PRICE SCHEDULE

#### MOBILERO® SYSTEM

Three Year Operating Contract

Water Treatment Processing Charge  
(MobileRO product water)

*1 yr. Contract*

*\$0.25/1000 gal*

\$0.25 per 1000 Gallons

Equipment Service Charge

Four 200 gpm trailer mounted systems  
800 gpm forced draft aerator capacity

*3 - 200gpm Trailers  
≈ \$1100/D*

\$1,100 per Day  
Included

Field Service Representative

Dedicated full-time to job site

*"*

Included

Delivery and Pickup Charge

*"*

\$1.50 per Mile

Term of Agreement

*One Year*

Three Years

Other - See Addenda (to be supplied by Navajo Refining)

Ecolochem's payment terms are Net 30 days from invoice date. Interest on past due amounts may be added in accordance with State Law. Any and all applicable Federal, State, or local taxes will be added to any payment due.

Treatment rates have been established based on the customer's influent water analysis. Variations of more than  $\pm 10\%$  in the influent water quality from that shown on Exhibit D may result in adjustment of this rate. Water produced will be metered by a totalizing flowmeter provided by Ecolochem. This meter will be utilized for billing purposes and flow measurement.



# ECOLOCHEM QUOTATION GLOSSARY

**COMPANY** — Shall refer to Ecolochem, Inc. and its affiliates or subsidiaries.

**DELIVERY AND REMOVAL CHARGE** — The rate specified, usually cost per mile, to deliver and remove the Ecolochem unit from the Customer's location. When a unit is delivered and there is no empty or exhausted unit to be returned, the cost is computed based upon the distance from the Ecolochem service center to the Customer's location and the same mileage from the Customer's location to the Ecolochem service center (round trip).

**FIELD SERVICE REPRESENTATIVE** — An employee of Ecolochem, Inc. who has been professionally trained to operate, troubleshoot and maintain Ecolochem's equipment. This employee is also able to provide a wide array of analytical services with Company supplied instruments.

## **FIELD SERVICE REPRESENTATIVE CHARGES**

**PER HOUR** — When required or requested by the Customer, Ecolochem will bill the Customer for all hours worked by the Field Service Representative while on-site at the Customer's location. Unless otherwise specified, a minimum of eight (8) hours per 24 hour day will be charged while the Field Service Representative is engaged by the Customer. A daily log sheet is provided by Ecolochem for the Customer's use in accounting for hours worked or charged for. The hourly rate is the same for straight time, overtime, holidays or weekends.

**PER DIEM** — A charge will be made to the Customer for each day the Field Service Representative is engaged by the Customer. The per diem rate includes, but is not limited to, the following: air fare to and from the location, meals, hotel/motel, rental car, telephone expenses, etc.

**MINIMUM TERM** — When an Ecolochem Field Service Representative is engaged by the Customer, it is required that the Field Service Representative provide services for a minimum of a 48 hour period. If a service requirement becomes interrupted for any reason, the Field Service Representative may be released if the release period is longer than 72 hours. If the release period is less than 72 hours and the Field Service Representative is called back to the job site, the Customer will be charged the travel expense of that same Field Service Representative or a different Field Service Representative, if required, due to availability or status.

**MINIMUM ORDER PER UNIT DELIVERED OR EXCHANGED** — A minimum fee, generally exclusive of Field Service Representative, service and freight charges, that applies to the processing charge for the unit. This minimum order fee will be charged regardless of how many gallons are processed through the unit, or if the unit is returned partially or totally unused unless otherwise specified.

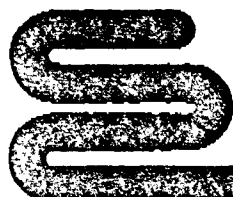
**PORTAL TO PORTAL** — When related to a service charge it means that the charge will commence upon the date and time the Ecolochem unit leaves its respective Ecolochem service center, until such date and time as it is returned to that same or different Ecolochem service center.

**PROCESSING CHARGE** — A fee charged for the processing of a fluid through equipment supplied by the Company. This fee may be expressed as a cost per gallon, cost per 1,000 gallons, cost per unit delivered or exchanged, or cost per day, week or month.

**SERVICE CENTER** — A location where Ecolochem provides services including resin regeneration, fleet storage, analytical services, sales support and technical support for itself and its customers.

**SERVICE CHARGE** — A fee imposed for the use of Ecolochem's fluid treatment equipment.

**UNIT/SYSTEM/EQUIPMENT** — Generally referred to as a piece of fluid treatment equipment such as a skid, a trailer or other mobile system provided by the Company.

**ECOLOCHEM®**

Reference # \_\_\_\_\_

**ADDENDA****ITEMS TO BE SUPPLIED BY NAVAJO REFINING:**

- \* Acid for scale control  
The total acid consumption per 200 gpm of permeate will be 450 lbs of 100% H<sub>2</sub>SO<sub>4</sub> per day.
- \* Electrical supplies  
Each MobileRO® requires a 3 phase, 480 volt, 200 amp hookup and also a 110 volt, 15 amp hookup.
- \* Installation by Navajo
- \* Ecolochem can provide installation to make the system a turn-key operation. The installation cost will be determined by a site visit by our project manager. These costs may be spread out over the first twelve months of the long term operating contract option.

**RO UNIT PERFORMANCE PROJECTION**  
 using "ROPRO" (c) v4.0 (07/08/88)  
 Provided to Ecolochem  
 by UOP Fluid Systems

PROJECT: Navajo Refining Company

DATE: 11/05/92

The unit has 72 Model 8221SD elements which are 1 yrs. old.

The Array is 6 / 4 / 2 with 6 element tubes

Permeate flow = 288000. gpd ( 200.0 gpm) at 85.0% recovery.

Feed Temp. = 21.1 C ( 70.0 F) Avg. annual unit Temp. = 21.1 C ( 70.0 F)

This unit would require 442. pounds per day of 100% H2SO4.

Feed Press. = 284.4 psi Brine Press. = 174.7 psi

Feed Osmotic Press. = 3.7 psi Brine Osmotic Press. = 10.3 psi

The ratio of the concentration in the brine to the saturation level for  
 CaSO4 is .87 SiO2 is .45

BANK	FEED		CONCENTRATE		AVERAGE ELEMENT gpd	TUBE DELTA P psi	FINAL BETA	ELEMENT % RECOVERY
	TOTAL gpm	TUBE gpm	TOTAL gpm	TUBE gpm				
1	307.7	51.3	199.0	33.2	4347.6	29.6	1.056	8.0
2	199.0	49.8	134.9	33.7	3845.0	29.1	1.048	7.0
3	134.9	67.5	108.5	54.3	3165.9	51.0	1.023	3.5

	RAW FEED mg/L	PRETREATED FEED mg/L	CONCENTRATE mg/L	PERMEATE mg/L
Ca	183.	183.	512.	3.9
Mg	55.	55.	154.	1.2
Na	2.	2.	5.	.3
K	1.	1.	3.	.2
NH4	0.	0.	0.	.0
CO3	0.	0.	0.	.0
HCO3	226.	77.	209.	5.9
SO4	460.	577.	1624.	6.7
Cl	21.	21.	54.	2.9
N03	0.	0.	1.	.1
F	0.	0.	0.	.0
SiO2	22.	22.	53.	5.2
SUM	970.	939.	2614.	26.3
TDS	857.	900.	2510.	23.4
CO2	24.	132.	132.	131.
pH	7.2	6.0	6.4	4.9
pHs		7.5	6.8	

This projection is the anticipated performance and is based on nominal properties of the elements. No allowance was made for fouling or for pressure losses in the manifolds.

This computer printout should not be considered a guarantee of system performance unless accompanied by a statement to that effect.

By tjc

*After H<sub>2</sub>O*  
*6.5*

The information contained herein is confidential and the exclusive property of Ecolochem, Inc. Disclosure of this information to others without the consent in writing of Ecolochem, Inc. is prohibited. This document and all copies are returnable to Ecolochem, Inc. upon demand.

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## TECHNICAL QUALIFICATIONS

### A. Corporate Experience

Since 1973, Ecolochem, Inc. has provided its services to essentially three types of needs. They are:

#### 1) Emergency

Requirement was unplanned and unexpected. Immediate response is critical, usually within 24 hours or less. Duration of work is usually unknown.

#### 2) Maintenance or Supplemental

Requirement was planned for and design and engineering of a system was able to be done on a timely basis. Work has a definite time frame.

#### 3) Extended Term

Requirement was carefully planned and reviewed from all aspects and a customized system is developed for delivery, installation and operation at the customer's site for an extended time frame, usually 12 months or longer. The system utilized generally replaces or augments the customer's own permanent system.

At the present time Ecolochem holds Service Agreements with over 500 individual plant locations to serve any or all of their service needs listed above.

### B. Corporate Capabilities and Resources

1. Ecolochem, Inc. is a Virginia company that was incorporated in 1973. Its principal business is providing mobile water treatment services on a global basis to a wide range of Fortune 500 industries which include nuclear and fossil utility plants, chemical plants, refineries, pulp and paper mills, pharmaceutical, food processing and electronics plants. References by company, industry or type of service can be provided.

## TECHNICAL QUALIFICATIONS

Page 2

2. The company relies upon technical innovation, around-the-clock service capability and the world's largest fleet of mobile water processing equipment to position itself as the world leader in this industry. The company has earned an enviable reputation for its ability to service the critical needs of in-plant water emergencies, as well as providing extended term service contracts for the processing of a portion or all of a client's water treatment needs.
3. The company has utilized the skills and abilities of its employees, laboratories, engineering and research and development to amass an impressive array of intellectual property which includes more than 13 United States and foreign patents for both equipment design and chemical/treatment processes. Seven more patents are pending issuance.

### Service Centers

4. Operating from its headquarters in Norfolk, Virginia, the company manages six regional service centers that provide full service, 24 hours per day, 365 days per year. Each service center maintains a full fleet of delivery vehicles including tractors, trailers, skids and vans. Chemical regeneration and custom loading of ion exchange resins and other media is handled at each plant. Equipment preparation, maintenance, quality control and pre rinsing is also accomplished at the service center. The service center is the regional base for its truck drivers, plant management and supervision, production and regeneration personnel, college degreed Field Service Representatives, Regional Sales Manager, Area Sales Managers, Area Sales Representatives and other staff and secretarial support functions.
5. Ecolochem's service centers are located in the following states and cities:

East Hartford, Connecticut  
Fontana, California  
Houston, Texas  
Miami, Florida  
Norfolk, Virginia  
St. Louis, Missouri



## TECHNICAL QUALIFICATIONS

Page 3

6. Ecolochem has chosen to standardize all of its water treatment equipment, as well as each of its service centers. This standardization of fleet and plants allows Ecolochem to quickly and easily provide identical services from any plant in the system. This is especially important during times of unusual demand for the company's equipment from any given service center. The fungibility of the fleet assets can be directed by the Dispatch Department to provide the ultimate in delivery and reserve capability.

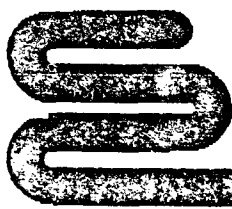
### Corporate Headquarters

7. Norfolk, Virginia is the headquarters. In addition to housing the largest regional service center, it is also the location for the following:

#### Executive Offices

Central Laboratory/Research and Development  
Technical Department/Engineering/CAD System  
Central Dispatch Department  
Equipment Construction Department  
Fleet Maintenance and Repair Facility  
Accounting Department  
Marketing Department  
Human Resources Department  
Purchasing Department/Warehouse and Inventory  
Regional Sales Office  
Instrumentation and Electronics Department

All of the departments and facilities listed are dedicated to the support of our regional service centers and the hundreds of accounts Ecolochem serves on a daily basis.



**ECOLOCHEM®, Inc.**

## PRODUCT BULLETIN MobileRO®

# MobileRO® Water Treatment System

**E**colochem, world leader in mobile water treatment services, introduces MobileRO.

Now you can supplement your water treatment system with RO – reverse osmosis. This practical and efficient process can reject most ionic contaminants as well as organics over 200 molecular weight.

The Ecolochem MobileRO System can be installed quickly and easily in a variety of locations to best meet your water specifications.

**Flexibility allows MobileRO to adapt to most any water treatment application.**

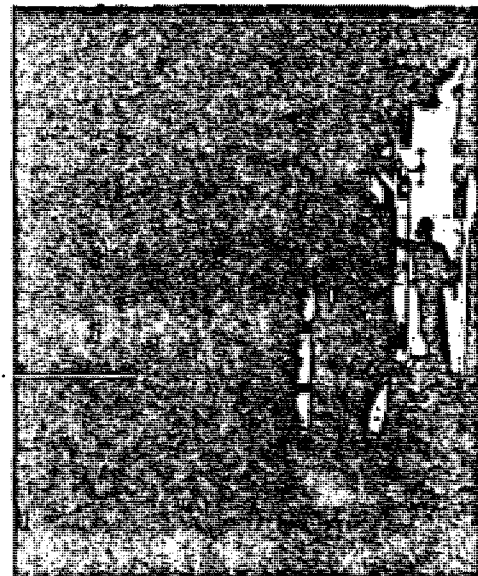
With a total flow capacity of over 200 GPM the design of the MobileRO System allows staged capacity with flows of 100 gpm from each of two independently operated arrays. Either spiral-wound cellulose acetate membranes or thin-film composite membranes are available for your application and are contained in 8"

diameter stainless steel pressure vessels.

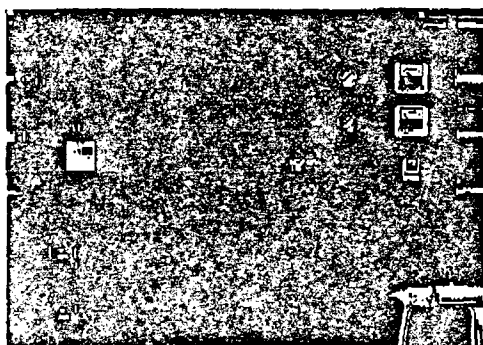
The MobileRO System comes equipped with two 60 inch diameter 100 psig ASME code pressure vessels. These vessels can be custom loaded to provide additional treatment such as filtration, softening or dechlorination in either the pre or post RO position. Also included are chemical injection, full instrumentation and fail-safe shut down controls – all in a weatherproof trailer with a self-contained propane heating system.

**Go with MobileRO for a variety of treatment needs.**

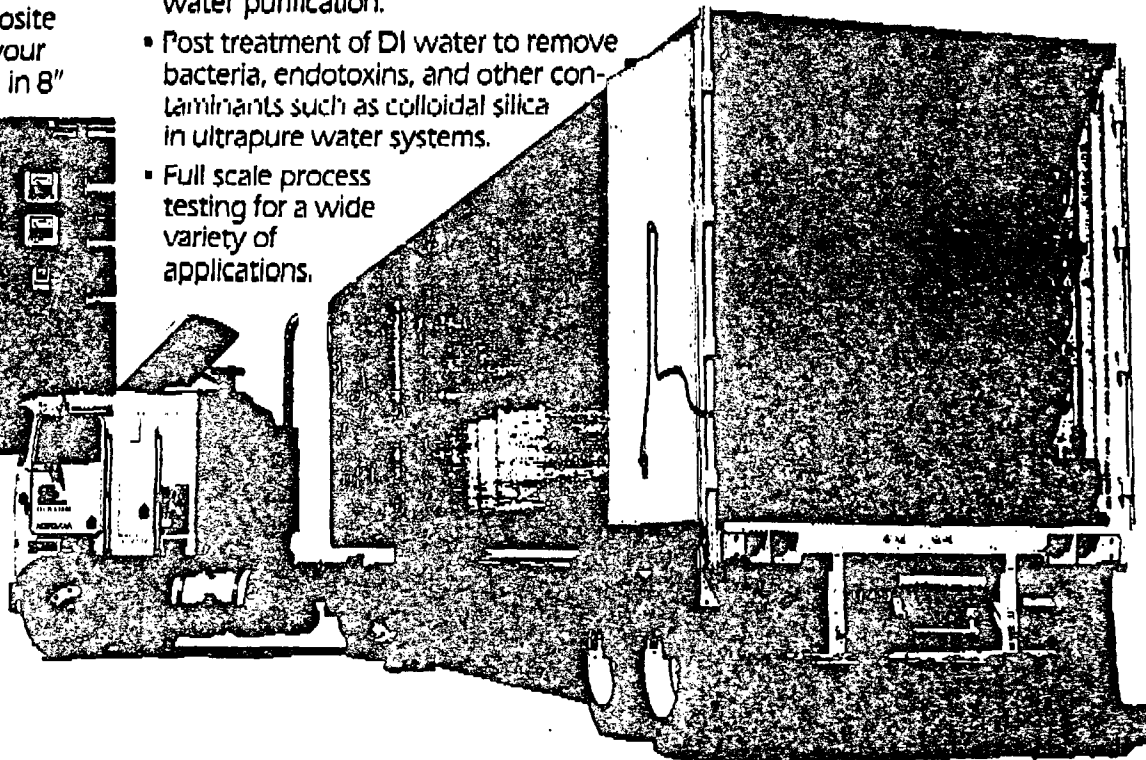
- TOC reduction for boiler feedwater use.
- TDS reduction prior to demineralization.
- Supplemental or emergency service to support in-house equipment for water purification.
- Post treatment of DI water to remove bacteria, endotoxins, and other contaminants such as colloidal silica in ultrapure water systems.
- Full scale process testing for a wide variety of applications.



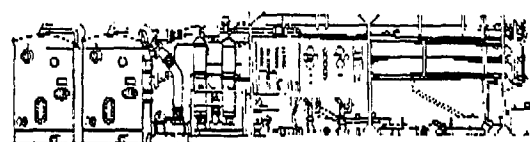
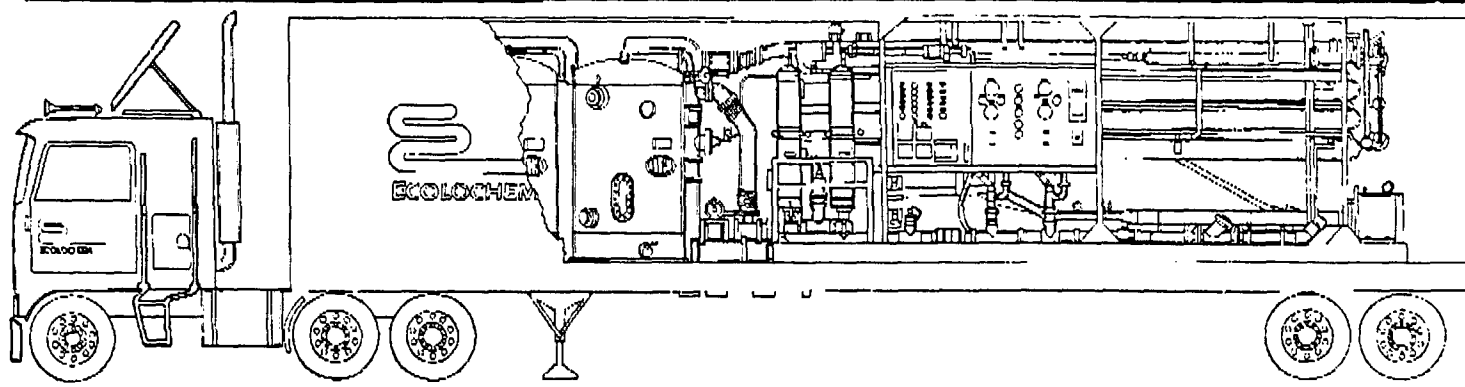
Ecolochem's college degreed Field Service Representatives, each one extensively trained and experienced, set up and monitor the MobileRO System to meet customer specifications.



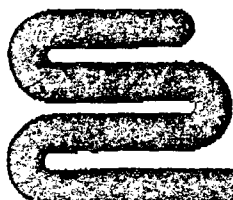
The MobileRO System has full instrumentation and fail-safe shut down controls. The entire MobileRO System is housed in a fully insulated and self-heated trailer capable of withstanding -20° F temperatures.



# MobileRO® System Specifications



TRAILER		RO SYSTEM – On Board		
<b>Dimensions and Weights</b>		Two pre or post treatment ASME code vessels.		
		200 GPM @ 40° F Reverse Osmosis System.		
	Length	48'	Two X 100 GPM arrays with stainless steel housings.	
	Width	8'	Optional skid mounted treatment vessel for post RO treatment.	
	Height	13' 6"	<b>Membranes</b>	Spiral wound cellulose acetate or thin film composite
Weight	45,000 lbs	<b>Electrical</b>		480 V, 3 phase, 60 HZ, 200 AMP, 4/0 lug connectors
<b>Electrical</b>	110 V - 20 AMP for internal lighting and instrumentation		<b>Operating Pressures</b>	100 psig feed – maximum
	480 V - 200 AMP for RO	50 psig feed – minimum		
<b>Connections</b>		70 psig service maximum		<b>Instrumentation</b>
	Inlet	4" Flange	System pressure gauges	
Outlet	4" Flange	Conductivity or resistivity meter		
RO Reject	2" Flange	Feed pressure control system		
	All connections are located on underside of trailer, mid-trailer, curbside.	pH controller		
		Acid, Chlorine & Inhibitor feed systems		
		5 micron cartridge prefilter		
Self-contained 25,000 BTU/H propane fired heater and propane supply tank suitable for operation down to -20°F.				
<b>GENERAL</b>				
The Ecolochem MobileRO® can be readily installed in either a pre or post DI position. Site requirements consist of adequate truck/trailer parking space on a compacted surface near adequate drains. The system can produce a minimum of 200		GPM at 40° F with a 300 GPM feedwater supply at 50 psig minimum pressure. Rejection rates in excess of 95% can be obtained at recovery rates of 65 - 80% depending upon influent TDS and ionic composition and membrane-selection.		



MobileRO®...available through our 24-hour-a-day,  
7 days-a-week toll free number...

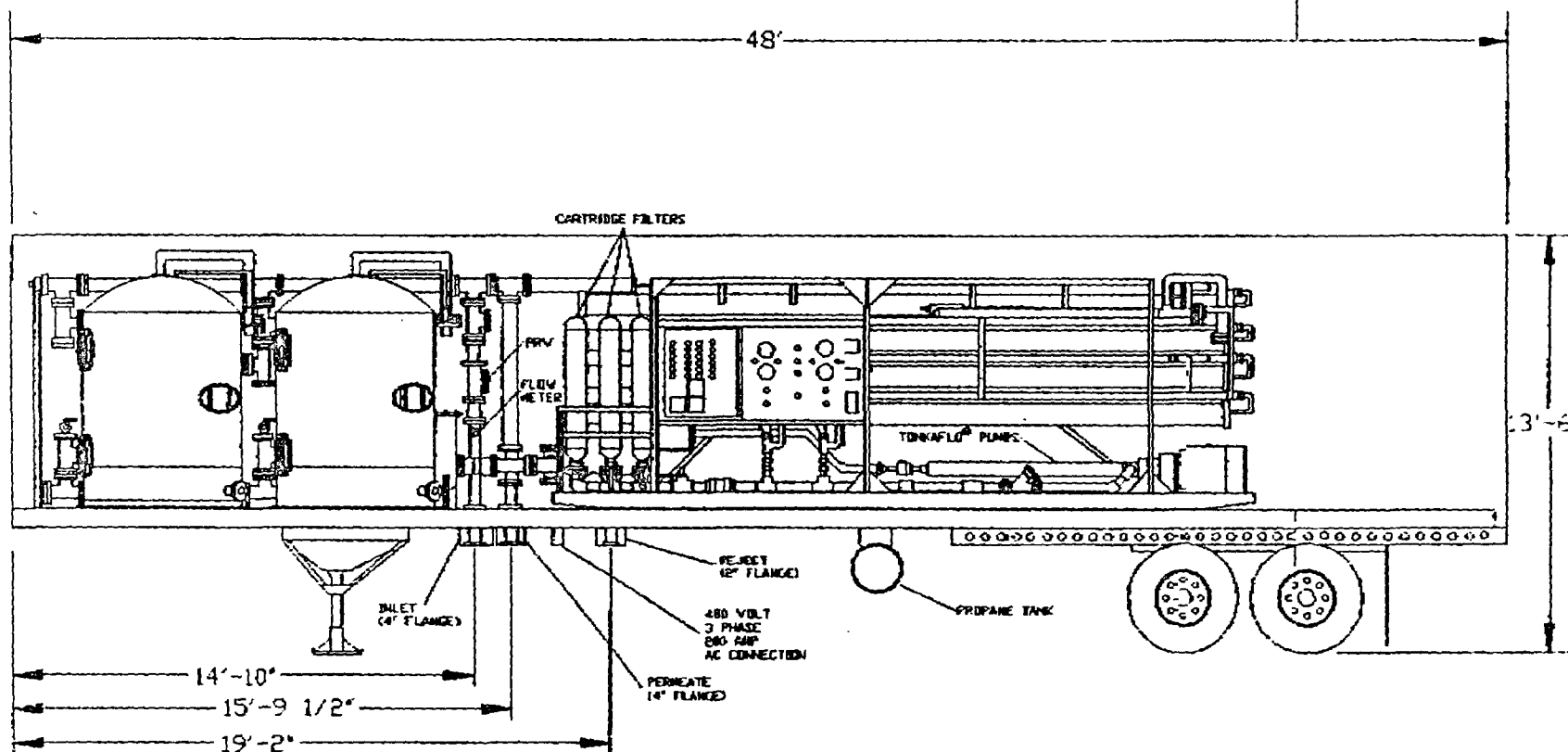
**1-800-446-8004 / Fax (804) 855-1478**

...exclusively from

**ECOLOCHEM®, Inc.**


Corporate Headquarters: 4545 Patent Road, Norfolk, VA 23502, (804) 855-9000

Regional Service Centers: Houston, TX; Miami, FL; St. Louis, MO; Norfolk, VA; Fontana, CA; East Hartford, CT.



MOBILERO®

NOTE: TRAILER 8' IN WIDTH

		
<b>ECOCHEM, INC.</b>		
<small>DRAWN BY:</small> <b>TRUMMOND</b>	<small>DRAWING FILE:</small> <b>NEQUIP-MROA</b>	<small>DATE:</small> <b>2-2-92</b>
<b>REVERSE OSMOSIS TRAILER</b>		
<b>200 GPM PERMEATE</b>		

TELEPHONE

(505) 748-3311

OIL CONSERVATION

REC-1

'92 NO 4



REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

EASYLINK

62905278

FAX

(505) 746-6410

ARTESIA, NEW MEXICO 88210

November 2, 1992

Roger Anderson  
Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, N.M. 87504

Re: NDPES Permit

Dear Mr. Anderson:

Several weeks ago I stopped by the OCD office to find that everyone but the secretaries were out of the office. I stopped in the main office and talked to Ms. Leech and gave her copies of document "A" attached to pass on to whoever might be interested, with instructions to please call if there were any problems or discussion items.

Since I'm not sure you ever received the information it is herein being supplied as an attachment along with the information provided to USEPA to apply to a NPDES permit as document "B".

Please review the enclosed information to determine what interests or requirements OCD may have in regard to the proposed water treatment system.

I sincerely hope you received the original documents; Navajo did not intend to bypass any OCD requirements in installing the water treatment system.

Please contact the undersigned for additional information or to provide guidance in any OCD requirements that need to be met.

Sincerely,

Ronald S. Loyd  
Regulatory Specialist

RSL/te

Roger Anderson  
Oil Conservation Division

Santa Fe, NM

Re: NPDES Permit

Dear Mr. Anderson:

Several weeks ago I stopped by the OCD office to find that every one but the secretaries was out of the office; I stopped in the main office and talked to Ms. Leach and gave her copies of document "A" attached to pass on to who ever might be interested with instructions to please call if there were any problems or discussion items.

Since I'm not sure you ever received the information it is herein being supplied as an attachment along with the information provided to USEPA to apply for a NPDES permit as document "B".

NAVAJO REFINING COMPANY  
PROCESS WATER PROPOSAL  
MAJOR POINTS

PROPOSAL--

INSTALL A DEMINERALIZATION PLANT TO TREAT THE WELL WATER BEFORE THE WATER ENTERS THE PROCESS FACILITY.

RESULT--

SMALLER VOLUMES OF WATER WOULD BE USED TO DISSOLVE SOLIDS IN PROCESS BECAUSE THE WATER COULD HOLD MORE SOLIDS BEFORE BEING REJECTED.

BENEFITS--

REDUCTION OF WATER TREATMENT CHEMICALS--

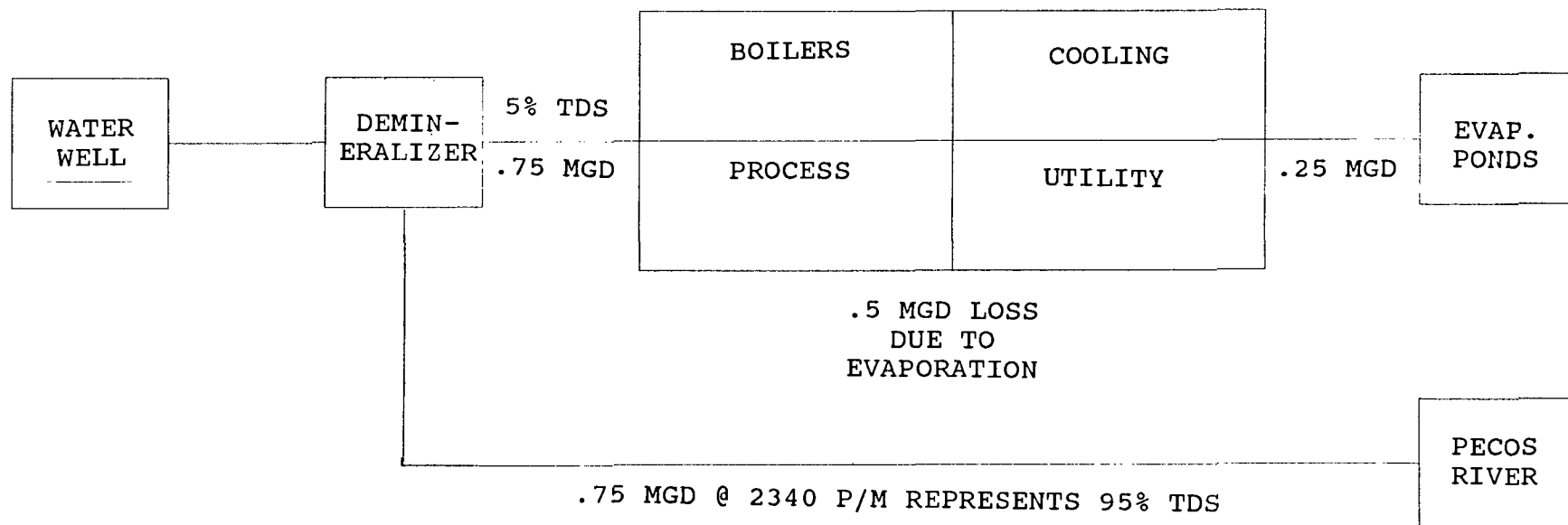
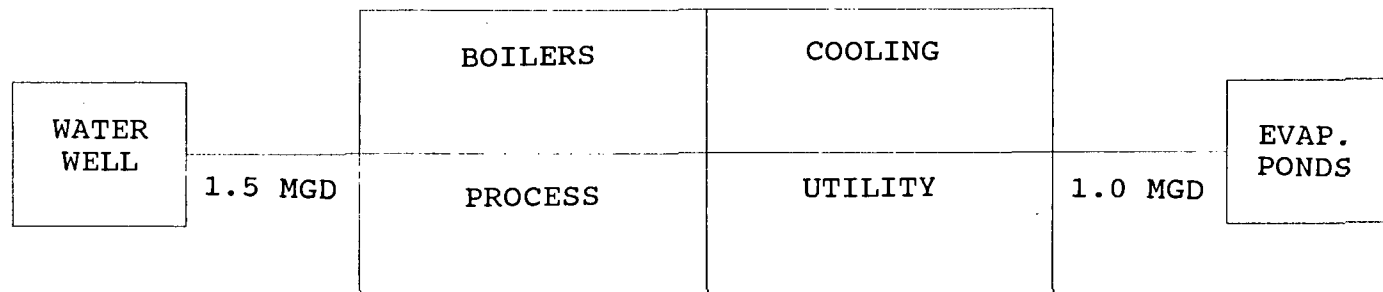
REDUCTION OF SOFTWATER TREATMENT--

REDUCTION OF HAZARDOUS WASTE VOLUME--

REDUCTION OF MINERAL BUILDUP IN EQUIPMENT--

REDUCTION OF WATER DEBT TO TEXAS--

REDUCTION OF VOLUME IN WATER SYSTEM ALLOWS BETTER  
PROCESSING OF STORM WATER IN THE SEWER SYSTEM--



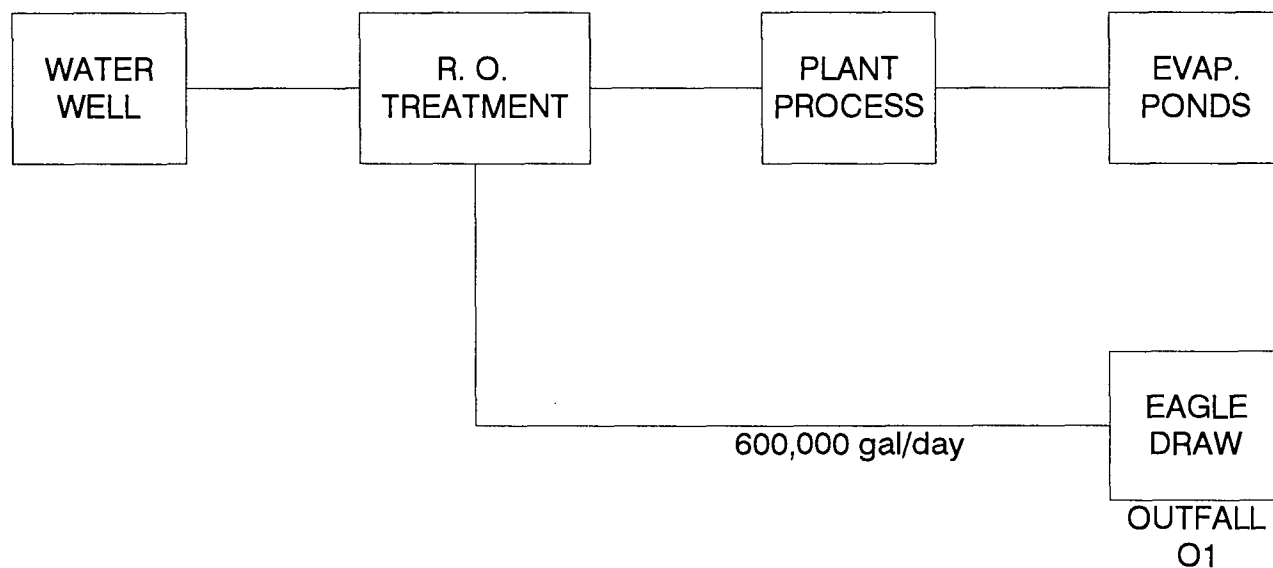
.75 MGD @ 2340 P/M REPRESENTS 95% TDS

2.3 ACRE FEET  
PER DAY



NAVAJO REFINING COMPANY  
P.O. DRAWER 159  
ARTESIA, NM 88211-0159

WATER DEMINERALIZATION SYSTEM



Note: The only permit required at this time is for the Reverse Osmosis process concentrate. Engineering studies are in progress to revise the plant process wastewater system.

WATER.WK

PROJECT PERFORMANCE PROJECT  
 using "ROPRO" (C) v 5.0MG (Feb 7, 1992)  
 Provided to SALTECH  
 by Fluid Systems Corporation

Project: NAVAJO Date: June 25, 1992  
 The unit has 54 Model TFCL 8829LP Elements Age = 3 yrs.  
 Tube Array = 6 / 3 Elements per Tube = 6  
 Permeate Flow = 325000. gpd (225.7 gpm) Recovery = 65.0%  
 Water Temp. = 25.0 C Avg. Annual Water Temp. = 25.0 C  
 Feed Press. = 201.4 psi Brine Press. = 149.5 psi  
 Feed Osmotic Press. = 7.7 psi Brine Osmotic Press. = 21.5 psi  
 This unit would require 107. pounds per day of 100% H2SO4.

BANK	FEED		CONCENTRATE		--AVGE. ELEMENT--		TUBE DELTA P psi	FINAL ELEMENT BETA
	TOTAL gpm	TUBE gpm	TOTAL gpm	TUBE gpm	FLOW gpd	FLUX gfd		
1	347.2	57.9	187.6	31.3	6384.	18.2	23.2	1.084
2	187.6	62.5	121.7	40.6	5276.	15.1	28.7	1.052
SYSTEM					6019.	17.2	51.9	

The ratio of brine molar concentration product to Ksp (brine) for  
 CaSO4 is .98  
 Brine conc. to saturation conc. ratio for reactive SiO2 is .31  
 The Stiff-Davis saturation index of the concentrate stream is plus 1.2

	RAW FEED mg/l	PRETREATED FEED mg/l	CONCENTRATE mg/l	PERMEATE mg/l
Ca	214.4	214.4	604.9	3.8
Mg	51.8	51.8	146.1	.9
Na	138.0	138.0	382.3	6.2
K	.0	.0	.0	.0
NH4	.0	.0	.0	.0
CO3	.0	.1	.3	.0
HCO3	258.6	226.5	621.3	13.6
SO4	683.0	708.2	2002.0	10.3
Cl	92.0	92.0	256.1	3.5
NO3	.0	.0	.0	.0
F	.0	.0	.0	.0
SiO2	14.1	14.1	39.5	.4
SUM	1451.9	1445.1	4052.6	38.7
TDS	1324.7	1333.7	3747.0	32.0
CO2	13.6	36.7	36.7	36.7
pH	7.5	7.0	7.4	5.8
pHs		6.9	6.3	

This projection is the anticipated performance and is based on nominal  
 properties of the elements. No allowance was made for fouling or for  
 pressure losses in the manifolds.

This computer printout should not be considered a guarantee of system  
 performance unless accompanied by a statement to that effect.

By DON CLINE



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

October 8, 1992

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-667-242-298**

Mr. David G. Griffin  
Superintendent of Environmental Affairs and Quality Control  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

**RE: OFFSITE GROUND WATER CONTAMINATION INVESTIGATION  
NAVAJO REFINERY  
EDDY, COUNTY, NEW MEXICO**

Dear Mr. Griffin:

The New Mexico Oil Conservation Division (OCD) has completed a review of Navajo Refinery's May 1992 "INVESTIGATION OF THE SUBSURFACE HYDROCARBON PLUME AT THE NAVAJO REFINERY, ARTESIA, NEW MEXICO" which was submitted to OCD on June 25, 1992. The report details the results of an investigation of ground water quality downgradient of the refinery complex.

The "Recommendations For Immediate Action" contained in the above referenced report are hereby approved with the following conditions:

1. Private wells RA-2723, RA-4196 and RA-4798 will be the domestic wells sampled for benzene, toluene, ethylbenzene and xylene (BTEX) on a biweekly basis.
2. Domestic wells RA-3156 and RA-3353 and monitor wells KWB-2A, KWB-3A, KWB-7 and KWB-9 will be sampled for BTEX on a quarterly basis. Quarterly monitoring will also include the product thickness in monitor wells KWB-5 and KWB-8.
3. Private wells RA-313, RA-314, RA-1331, RA-307, RA-1227 will be the irrigation wells sampled monthly for BTEX during the irrigation season.

Mr. David G. Griffin  
October 8, 1992  
Page 2

4. In addition to the product recovery recommended at monitor wells KWB-4, KWB-6 and in the vicinity of borehole 91, the OCD requires that product be recovered in the vicinity of boreholes 78, 87 and 92.
5. Navajo will notify OCD of the proposed disposition of all recovered fluids prior to commencement of recovery.
6. Navajo will submit, for OCD approval, information on the location and design of recovery systems for the borehole areas referenced above prior to installation.
7. Navajo will notify OCD at least two weeks prior to all water quality sampling events such that OCD may have the opportunity to witness and/or split samples.
8. Navajo will submit the results of all water quality monitoring quarterly. Quarterly reports will be due on the first day of January, April, July and October of the respective year.
9. Initiation of all "Immediate Actions" will occur **within 30 days of receipt of this letter.**

The work performed provides a good start toward delineation of contaminants migrating from the refinery. However, the OCD has several comments and requests for additional information regarding the proposed long term actions. Therefore, the OCD defers approval of Navajo's "Recommendations For Long Term Action" until the information below is received. Please submit the following information **within 60 days of receipt of this letter:**

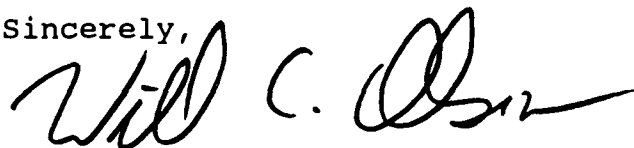
1. Ground water samples were only analyzed for benzene, toluene, ethylbenzene, xylene, conductivity, pH and major cations and anions. The OCD requires that all monitor wells also be sampled and analyzed for halogenated volatile organics, polynuclear aromatic hydrocarbons and heavy metals. Please conduct these analyses on ground water from all of the monitor wells using EPA approved methods and submit the results to OCD.
2. Five domestic water wells (RA-4922, RA-6550, RA-7180, RA-4684 and RA-4765) were listed in Table 1, however, no further information was provided regarding water quality from these wells. Please supply information regarding the existence of these wells and, if in existence, the quality of ground water from the wells.

Mr. David G. Griffin  
October 8, 1992  
Page 3

3. Information on product thickness for borings 62-66 were omitted from Table 3. Please supply OCD with this data.
4. The "Recommendations For Long Term Action" contain only general information regarding additional work for plume definition and remediation of contaminated ground water. The OCD requires more specific information in order to evaluate these recommendations. The OCD requires that Navajo submit 2 separate detailed work plans for the offsite migration of petroleum contaminants as follows:
  - a. Please submit a work plan for the additional plume definition providing detailed information on proposed locations of additional monitor wells, specifics of monitor well construction, sampling procedures and analytical methods to be used for determining water quality parameters.
  - b. Please submit a work plan for the long term remediation of contaminated ground water providing detailed information on locations of recovery wells and/or trenches, construction details, types of recovery equipment, treatment of contaminated ground water, monitoring of the recovery system and disposal of all recovered fluids.

The OCD looks forward to working with you as contamination investigation and remedial activities at the refinery continue. If you have any questions, please feel free to contact me at (505) 827-5885.

Sincerely,



William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: Mike Williams, OCD Artesia District Supervisor  
David G. Boyer, K.W. Brown Environmental Services

NAVAJO REFINING COMPANY  
PROCESS WATER PROPOSAL  
MAJOR POINTS

PROPOSAL--

INSTALL A DEMINERALIZATION PLANT TO TREAT THE WELL WATER BEFORE  
THE WATER ENTERS THE PROCESS FACILITY.

RESULT--

SMALLER VOLUMES OF WATER WOULD BE USED TO DISSOLVE SOLIDS IN  
PROCESS BECAUSE THE WATER COULD HOLD MORE SOLIDS BEFORE BEING  
REJECTED.

BENEFITS--

REDUCTION OF WATER TREATMENT CHEMICALS--

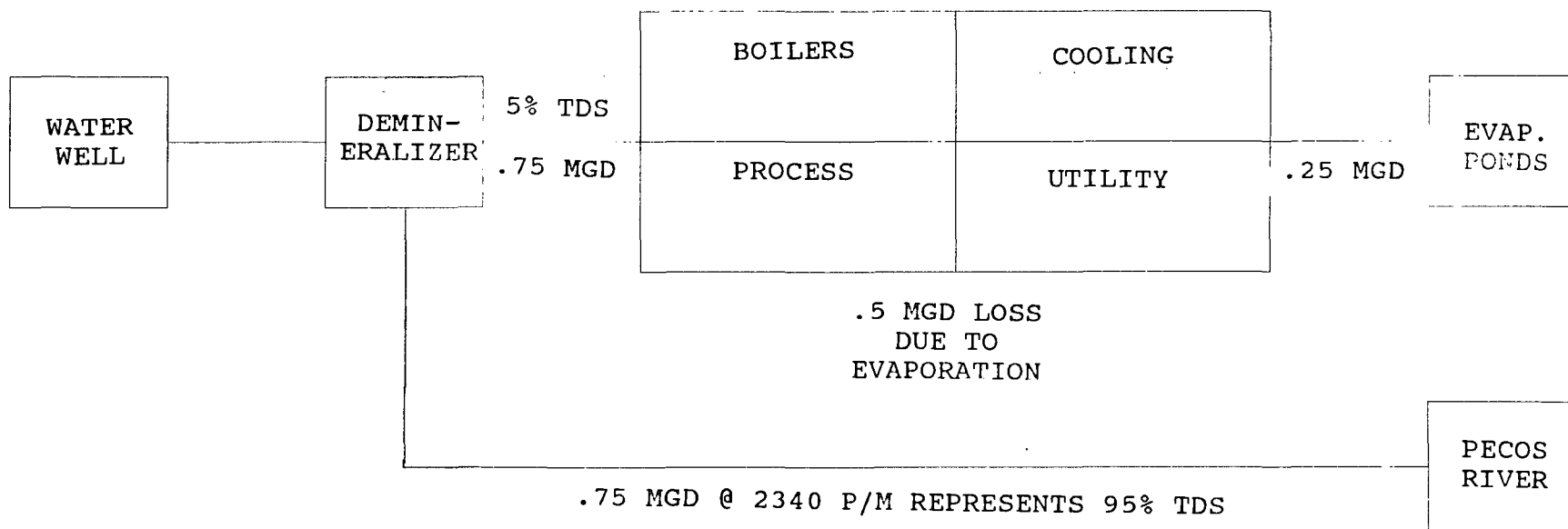
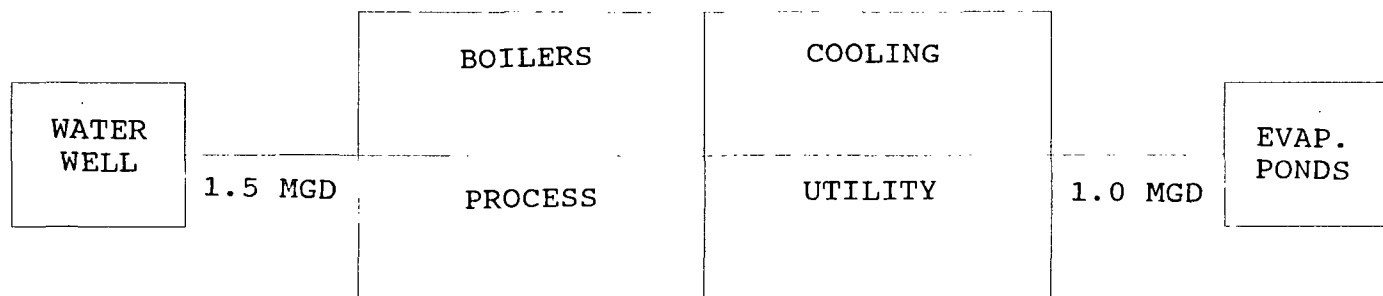
REDUCTION OF SOFTWATER TREATMENT--

REDUCTION OF HAZARDOUS WASTE VOLUME--

REDUCTION OF MINERAL BUILDUP IN EQUIPMENT--

REDUCTION OF WATER DEBT TO TEXAS--

REDUCTION OF VOLUME IN WATER SYSTEM ALLOWS BETTER  
PROCESSING OF STORM WATER IN THE SEWER SYSTEM--



.75 MGD @ 2340 P/M REPRESENTS 95% TDS

2.3 ACRE FEET  
PER DAY

TELEPHONE  
(505) 748-3311



# REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

February 4, 1992

EASYLINK  
62905278

OIL CONSERVATION DIVISION  
RECEIVED FAX (505) 746-6410

'92 FEB 10 AM 8 58

Mr. Roger Anderson  
Acting Bureau Chief  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

RE: OFFSITE HYDROCARBON CONTAMINATION INVESTIGATION  
NAVAJO REFINERY, ARTESIA NEW MEXICO

Dear Mr. Anderson:

This letter provides additional information on actions taken by Navajo Refinery in response to our discovery of an offsite hydrocarbon plume east of the refinery. It is Navajo's intent to keep the Oil Conservation Division informed of the status of our investigation of the problem, as requested by you in a previous telephone conversation.

Within the past several weeks, Navajo has contracted with K. W. Brown Environmental Services to perform the initial investigation of the contamination. Their initial work will be to define the background hydrologic conditions that exist during the Winter season and that likely will be affected by Spring irrigation. Due to the short time remaining to obtain background information, KWBES will commence installation of piezometers and monitoring wells in the next two weeks with further investigation scheduled for March.

Attached for your use is a copy of the agreed upon scope of work, which includes a time schedule for Phase I completion. Prior to our initiating remediation of the affected area, we will provide you with a proposed Remediation Plan for your review and approval.

If you have any questions on our current plan or with additional information, please contact me at 748-3311.

Sincerely,

David G. Griffin  
Supt. Environmental  
Affairs/Quality Control

DGG/pb



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

October 21, 1991



POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**CERTIFIED MAIL**

**RETURN RECEIPT NO. P-327 278 281**

Mr. David G. Griffin  
Superintendent of Environmental Affairs and Quality Control  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

**RE: DISCHARGE PLAN GW-28  
NAVAJO REFINERY  
EDDY, COUNTY, NEW MEXICO**

Dear Mr. Griffin:

The ground water discharge plan, GW-28, for the Navajo Refinery located in the SE/4 Section 1, E/2 Section 8, w/2 Section 9, N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico is hereby approved with the following conditions and reasons (as required by the New Mexico Water Quality Act, Section 74-6-5K.):

1. Navajo Refining Company shall complete all commitments by previously agreed upon dates unless written permission for alternate dates is subsequently approved by the Oil Conservation Division (OCD).

Reason: The refinery is a complex facility with many interdependent operations. Unplanned events can occur that can cause unintentional delays in meeting previously agreed upon commitments. However, it is incumbent upon Navajo Refining Company to report such delays, provide adequate explanation, and propose reasonable alternate dates of compliance.

2. Navajo Refining Company shall provide copies of all 1991 and subsequent reports and correspondence between the USEPA (and NMED if applicable) regarding Solid Waste Management Units (SWMU's) at the refinery.

Reason: EPA is requiring an extensive investigation of solid waste management units, including the Truck Bypass landfarm and the existing evaporation ponds, to define the

Mr. David G. Griffin  
October 21, 1991  
Page 2

nature, extent, magnitude, and rate of migration from solid waste units. If information or reports generated as a result of these studies show that offsite contamination in excess of Water Quality Control Commission (WQCC) standards, or of toxic pollutants has occurred and is continuing to occur, OCD will require Navajo Refining Company to submit a discharge plan modification to OCD within 120 days of the date OCD notifies the refinery that such a modification is necessary. OCD needs current EPA-required reports and correspondence to determine the necessity of requiring a discharge plan modification.

3. Navajo Refining Company will be required to submit plans for testing and demonstrate integrity of its three-mile long effluent pipeline between the main refinery complex and the disposal ponds prior to renewal of the discharge plan.

Reason: Because of the failure of a major buried flowline that was installed less than five years at another OCD-regulated facility, OCD will require the effluent line to be tested before the normal 20 to 25 year period required of other wastewater lines at the facility. This line will be nine years old at the time of discharge plan renewal and an undetected break or major leak could cause significant contamination in the shallow ground water along the pipeline route.

The discharge plan consists of the application and supplemental material submitted to the Oil Conservation Division as shown on **Attachment A** which is made part of this approval. The discharge plan submittal did not include information on the existing Truck Bypass landfarm, nor, by previous agreement, did it include remedial activities for remediation of previous spills or leaks of hydrocarbons. By separate correspondence, OCD will require submittal of information and approval for these individual activities.

Monitoring and reporting of effluent discharge and ground water in the vicinity of the evaporation ponds shall be as shown in **Attachment B** included as part of this approval. Except for the change in dates, this schedule was previously presented and agree upon in OCD and Navajo Refining Company correspondence dated May 22, 1990 and July 5, 1990, respectively. No ground water monitoring is being required at the main refinery complex at this time, however such monitoring may be required as part of the Truck Bypass landfarm discharge plan modification and as a result of remedial activities not included in the current discharge plan.

Navajo Refining company will provide OCD with timely notification of the discovery of above or below ground spills, leaks or other discharges of crude or refined product, chemicals, wastewater or other contaminants in accordance with WQCC Regulation 1-203 and OCD's letter to Navajo Refining Company dated February 22, 1990.

The discharge plan was submitted pursuant to Section 3-106 of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note

Mr. David G. Griffin  
October 21, 1991  
Page 3

Section 3-109.F., which provides for possible future amendments of the plan. Please be advised that approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other local, state, or federal laws and/or regulations.

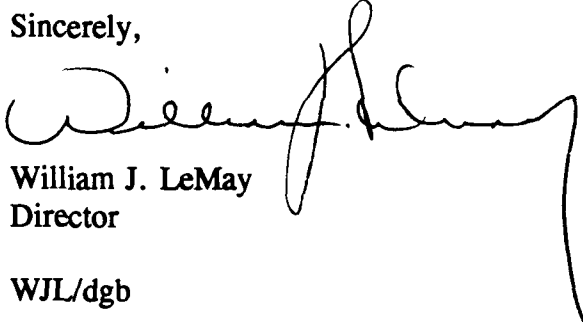
Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter), shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that section 3-104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.C., you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3-109.G.4., this plan approval is for a period of five years. This approval will expire October 21, 1996, and you should submit an application for renewal in ample time before that date. It should be noted that all gas processing plants and oil refineries in excess of twenty five years of age will be required to submit plans for, or the results of an underground drainage testing program as a requirement for discharge plan submittal. As previously agreed (OCD letter dated 10/16/90), waste piping identified as being over 25 years old as of January 1, 1991, is required to be tested prior to discharge plan renewal.

On behalf of the staff of the Oil Conservation Division, I wish to thank you, Matt Clifton and Zeke Sherman for your cooperation during this very lengthy discharge plan review.

Sincerely,



William J. LeMay  
Director

WJL/dgb

Attachments

cc: OCD Artesia District Office

## ATTACHMENT A

### LIST OF SUBMITTALS AND AGREEMENTS

#### Discharge Plan GW-28 Navajo Refinery, Eddy County, NM

<u>Date</u>	<u>Source</u>	<u>Brief Description</u>
December 7, 1984	Navajo	Site hydrogeology and process descriptions
February 25, 1985	Navajo	Effluent flow and chemical characteristics of waste streams
March 5, 1985	Navajo	Response to 2-7-85 OCD comments
March 8, 1985	Navajo	Agreement to comply with WQCC Section 1-203.A.
July 31, 1985	Navajo	Discharge plan application
August 19, 1986	Navajo	Specifications for the wastewater treatment plant
November 10, 1987	Navajo	Specifications for influent and effluent pipelines
December 24, 1986	Navajo	Evaporation pond, proposed hydrologic investigations
June 1, 1987	Navajo	Final report, evaporation pond investigations
January 11, 1988	Navajo	Correction of inspection deficiencies, evap. pond freeboard
February 11, 1988	OCD	Listing of DP commitments agreed to at 2-11-88 meeting
March 17, 1988	Navajo	Specifications for evaporation pond expansion
March 31, 1988	Navajo	Inventory and test procedure for underground product lines
May 3, 1988	Navajo	Navajo SPCC plan
June 7, 1988	Navajo	Report on progress meeting DP commitments
September 29, 1988	Navajo	Report on progress meeting DP commitments
December 23, 1988	Navajo	Report on progress meeting DP commitments
January 24, 1989	Navajo	Specifications for spill containment: CBO loading, salt filters
November 6, 1989	Navajo	Evaporation pond area, monitor well elevation survey
February 7, 1990	Navajo	In-service notification for evaporation pond #6
February 22, 1990	OCD	Requirements for spill notification
May 10, 1990	Navajo	Land acquisition, evaporation ponds
July 5, 1990	Navajo	"Housekeeping", and ground water monitoring commitments
July 12, 1990	Navajo	Catchment and drainage drawings for storage tanks
November 12, 1990	Navajo	Pit closure, underground waste piping report proposal
February 12, 1991	Navajo	Drawings of underground wastewater lines
February 26, 1991	Navajo	Backfill of asphalt pit
April 25, 1991	Navajo	Construction drawings, trickling filter

## ATTACHMENT B

### **GROUND WATER MONITORING AND REPORTING REQUIREMENTS**

#### **Discharge Plan GW-28**

#### **Navajo Refinery, Eddy County, New Mexico**

1. Effluent from the pipeline shall be sampled annually where it enters the ponds. Field pH and conductivity shall be measured. Analysis shall include BTEX, major cations/anions\* plus fluoride, WQCC metals and PAH's.
2. OCD will require that the following wells be sampled on an annual/semi-annual basis beginning Fall 1991. To provide adequate coverage and provide warning of a possible problem, a staggered schedule is required:

	Fall '91	Spring '92	Fall '92
MW-1	x	-	x
MW-2	x	-	x
MW-3	x	x	x
MW-4	x	x	x
MW-5	x	x	x
MW-6	x	x	-
MW-7	x	x	-
OCD-1	x	x	-
OCD-2	x	-	x
OCD-3	x	x	-
OCD-4	x	-	x
OCD-5	x	x	-
OCD-6	x	-	x
OCD-7	x	x	-
OCD-8	x	-	x

Subsequent year sampling will follow the staggered schedule shown for 1992. Please notify OCD two weeks in advance to provide us with an opportunity to split samples. Sampling shall include field measurements of water level, pH and conductivity; and laboratory analyses for BTEX, major cations/anions\* plus fluoride, and in MW-4 and 6 naphthalene and mononaphthalene. Because MW-4 and MW-5 are located at the south property boundaries and have shown organic contamination previously, they will be monitored semiannually.

3. Reports of water analyses shall be provided to OCD within six weeks of the date of sampling by Navajo.

\* Major cations/anions are sodium, potassium, calcium, magnesium, chloride, sulfate, carbonate and bicarbonate.

TELEPHONE  
(505) 748-3311



OIL CONSERVATION DIVISION  
RECEIVED  
REFINING COMPANY  
501 EAST MAIN STREET P. O. DRAWER 159

EASYLINK  
62905278

FAX  
(505) 746-6410

ARTESIA, NEW MEXICO 88210

April 25, 1991

Mr. David G. Boyer, Chief  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

Re: Installation of Trickling Filter

Dear Mr. Boyer:

This letter is to inform you that Navajo is upgrading its Waste Water Treatment System, with the installation of a trickling filter biological treatment process. The trickling filter is located downstream of the existing treatment plant in the Northeast part of the refinery and consists of the reactivation of an old trickling filter formerly operated by the City of Artesia prior to 1970.

In preparation to reactivate the trickling filter, Navajo, who had previously removed the old rock fill, had repairs done to the bottom to seal all cracks and replace any damaged sections. The bottom was then inspected by an independent professional engineer, Mr. David Bollschweiler, P.E. No. 7310, to confirm the integrity of the bottom. Mr. Bollschweiler will be performing subsequent inspections as each step in preparing the unit to resume operation is completed. Navajo has a target date for start up of May 2, 1991.

The installation of this trickling filter will result in an improvement in the quality of the waste water Navajo currently discharges to the evaporation ponds. The actual improvement will be determined by testing after the unit has been fully commissioned.

Enclosed for your information are a set of the construction drawings on the trickling filter. Also enclosed is a copy of Navajo's response to the deficiencies EPA identified in our HSWA RFI Phase II Work Plan. Please look these over and let me know your comments.

Sincerely,

David G. Griffin  
Supt. Envir. Affairs  
& Quality Control

DGG/pb

enclosure



## REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

NEW Telecopy #: (505) 748-3311

(505) 748-3311, ext. 343

T E L E C O P Y      T R A N S M I S S I O N

SENDING TO: Name DAVE BOYER  
Organization/Firm OCD  
Reference \_\_\_\_\_  
Telecopy # 827-5741

SENDING FROM: Name MATT CLIFTON  
Date \_\_\_\_\_ Time \_\_\_\_\_

Number of pages, including this cover page 8

If you do not receive all pages, please call Suzette  
at (505) 748-3311, ext. 270. Thank you.

SPECIAL INSTRUCTIONS: \_\_\_\_\_

FOR YOUR INFO. —  
PLEASE NOTE THE SECOND "I"  
IN THE PHASE II WORK PLAN LETTER.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202-2733

MAR 19 1991

RECEIVED  
MAR 22 1991

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. Jack P. Reid, President  
Navajo Refining Company  
501 E. Main Street  
Artesia, New Mexico 88210

NAVAJO REFINING CO.

RE: RFI Phase I Report - Navajo Refining Co.  
NMD048918817

Dear Mr. Reid:

We have completed our technical review of your RFI Phase I Report submitted on November 1, 1990, and have determined the Report to be deficient. A list of deficiencies is enclosed for your review.

You shall have 30 days from the receipt of this letter to submit a modified report which addresses the enclosed deficiencies. If this modified report is not approved, we may make further modifications as required. Submission of grossly deficient RFI Reports may subject the Permittee to enforcement action under Section 3008 of RCRA.

If you have any questions concerning this matter, please contact Richard Mayer of my staff at (214) 655-6775.

Sincerely yours,

*Jack Davis*  
for Allyn M. Davis  
Director  
Hazardous Waste Management Division

Enclosure

cc: Kathleen Sisneros, NMEID



DEFICIENCIES OF NAVAJO  
RFI PHASE I REPORT

1. Appendix 2: The raw data report submitted by Professional Service Industries has several glaring deficiencies and needs to be amended. The most glaring deficiency is that none of the volatile and semi-volatile results indicate what analytical method was used to obtain the results.
2. In addition, the Agency did a thorough review of the first 1/ 3 of the Appendix 2 document and found contaminated samples not reported in the consolidated RFI report. Below are samples which were not included in the report:
  - A. Sample NMD-TR-010-01 had .4 ppm of Ethylbenzene and .4 ppm of Total Xylenes;
  - B. Sample NMD-TR-010-01 SP had 1.5 ppm Ethylbenzene and 1.8 ppm Total Xylenes;
  - C. Sample NMD-TR-010 SP duplicate had 2.9 ppm Ethylbenzene and 3.5 ppm Total Xylenes;
  - D. Sample NMD-TR-010-05 had .5 ppm Ethylbenzene and .3 Total Xylenes;
  - E. Sample NMD-TR-010-02 had 8.5 ppm Toluene, 15 ppm Ethylbenzene, and 30 ppm Total Xylenes;
  - F. Sample NMD-TR-010-03 had .77 ppm Ethylbenzene and 2 ppm Total Xylenes;
  - G. Sample NMD-TR-003-01 was not included in the consolidated report, it had .67 ppm Toluene;
  - H. Sample NMD-TR-013-05 was not included in the consolidated RFI Report, it had 1.8 ppm Benzene, 6.6 ppm of Toluene, 8.6 ppm of Ethylbenzene, Total Xylenes 19 ppm
  - I. Sample NMD-TR-0010-01 SP had 1.0 ppm Di-n-butyl phthalate, 1.4 ppm Dimethylphthalate, .7 ppm Napthalene, 1.4 ppm Pentachlorophenol, 6.6 ppm Phenathrene, and 3.2 ppm Pyrene;
  - J. Sample NMD-TR-010-01 SP duplicate had .91 ppm Di-n-butyl phthalate, 1.9 ppm Dinitrotoulene, 4.8 ppm Phenanthrene, and 3.6 ppm Ppyrene;

Therefore, Navajo needs to carefully review ALL raw data to include those results in the consolidated RFI report.

3. Also, the following problems were found:
  - A. Sample NLF-SB-005-02 did not include all the metals (concentration) that it was analyzed for in the RFI report.
  - B. Samples NLF-SB-004-05, 06, 07 are not included in the RFI report.
  - C. The No.'s for NLF-SB-002-01 in the RFI report are incorrect according to the raw data report.

4. There are several samples in Appendix 2 (raw data) where the date for the extraction times were not given and need to be corrected.
5. Please indicate the depth intervals for all soil sample analysis in the RFI Report.
6. Navajo needs to indicate what further action (monitoring) is required at the Truck Bypass Landfarm, such as soil core sampling, etc.
7. Navajo needs to indicate in the RFI report where the contamination from the downgradient wells around the Truck Bypass Landfarm is originating from. Navajo should also indicate all other oil/ground water recovery operations.
8. Region 6 is very much concerned about the major differences in analytical results from the split sampling event (soil samples) between Navajo and PRC (See Attachment 1). In the Phase II work, the Region will require Navajo to use a laboratory which meets the terms and conditions stated in the statement of work for the Contract Lab Program (CLP).

APPENDIX 1  
TABLE 3  
COMPARISON OF CHEMICAL ANALYSES  
FOR SAMPLES FROM THREE-MILE DITCH

	BLACK SLUDGE			SILTY CLAY SOIL		
	NAVAJO NMD-TR-12-92	PRC N-1	RPD (Percent)	NAVAJO NMD-TR-08-92	PRC N-2	RPD (Percent)
<b>VOA (µg/kg)</b>						
Benzene	1,800	2,600 (J)	36	10,000	20,000 (J)	67
Toluene	7,000	21,000	100	56,000	100,000 (J)	56
Ethylbenzene	8,500	24,000	95	34,000	71,000 (J)	70
Xylenes	19,000	51,000	91	60,000	190,000 (J)	103
Acetone	-	ND	-	ND	ND	-
Methylene Chloride	-	6,400	-	ND	8,900 (J)	-
VOA TCC (max. conc.)	-	75,000 (J)	-	-	110,000 (J)	-
<b>SVOA (µg/kg)</b>						
Phenol	-	16,000 (J)	-	ND	ND	-
o-Methylphenol	-	8,100 (J)	-	ND	ND	-
p-Dimethylphenol	-	ND	-	ND	ND	-
Fluorene	7,200	25,000	111	43,000	94,000 (J)	26
Fluoranthene	ND	7,500 (J)	-	22,000	19,000 (J)	20
2-Methylnaphthalene	2,500	87,000	189	65,000	51,000 (J)	24
Naphthalene	5,000	35,000	120	20,000	ND	-
Phenanthrene	ND	88,000 (J)	-	18,000	150,000 (J)	157
1,2,3-Ethylphenylphenol	ND	ND	-	ND	ND	-
Acenaphthene	ND	13,000 (J)	-	9,200	12,000 (J)	-
Anthracene	ND	ND	-	20,000	13,000 (J)	42
Benzo(a)Anthracene	-	13,000 (J)	-	2,000	ND	-
2,4-Dinitrotoluenes	2,400	ND	-	ND	ND	-
2,6-Dinitrotoluenes	3,100	ND	-	ND	ND	-
Dibenzofuran	3,800	21,000	159	9,700	13,000 (J)	29
Pyrene	ND	20,000	-	15,000	20,000 (J)	29
Chrysene	-	13,000 (J)	-	3,400	ND	-
SVOA TCC (max. conc.)	-	630,000 (J)	-	-	84,000 (J)	-
Oil/Grease (mg/kg)	49,200	340,000	149	22,100	3,400	121
<b>Total Metals (mg/kg)</b>						
Aluminum	-	10,600	-	-	2,970	-
Antimony	ND	ND	-	ND	ND	-
Arsenic	12.6	36.9	98	3.03	2.7	12
Barium	41.7	150	113	73.9	106	26
Beryllium	ND	ND	-	ND	ND	-
Cadmium	1.33	ND	-	0.94	ND	-
Calcium	-	170,000	-	-	32,500	-
Chromium	547	1,970	113	5.9	13.1	78
Cobalt	-	12.5 (B)	-	-	1.9 (B)	-
Copper	-	60.3	-	-	7.0	-
Iron	-	7,500	-	-	2,020	-
Lead	16.5	41.6	124	0.97	3.3	169
Magnesium	-	46,100	-	-	6,900	-
Manganese	-	318	-	-	243	-
Mercury	0.07	ND	-	0.17	ND	-
Nickel	4.1	13.0 (B)	93	1.04	5.7 (B)	16
Potassium	-	2,500	-	-	603 (B)	-
Selenium	ND	7.6	-	ND	ND	-
Silver	1.24	ND	-	3.03	ND	-
Sodium	-	2,066	-	-	446	-
Thallium	-	ND	-	-	ND	-
Vanadium	-	14.1 (B)	-	-	13.3	-
Zinc	50.5	664	161	4.00	6.5	40

Notes: ND = not detected

TCC = tentatively identified

RPD = relative percent difference

$= 100(X_1 - X_2) / X_{\text{mean}}$

CLP Data Qualifiers:

Value listed represents the estimated concentration of the highest TCC present in the sample.

Navajo and PRC's results for sample split.

J = the measured concentration.

B = analytical value also detected in the laboratory blank.

TABLE 4  
COMPARISON OF CHEMICAL ANALYSES  
FOR SAMPLES FROM THE TRUCK BYPASS LANDFARM

	BROWN SLUDGE			SILTY CLAY SOIL		
	NAVAJO NLE-SB-03-01	PRC N-3	RPD (Percent)	NAVAJO NLE-SB-03-01	PRC N-4	RPD (Percent)
<b>VOCs (µg/kg)</b>						
Benzene	ND	75	-	ND	ND	-
Toluene	ND	23 (J)	-	ND	ND	-
Ethylbenzene	ND	20 (J)	-	ND	ND	-
Xylenes	ND	60	-	ND	ND	-
Acetone	ND	330	-	ND	29 (BJ)	-
Methyl Isopropyl Chloride	ND	71 (B)	-	ND	24 (BJ)	-
Chloroform	ND	ND	-	ND	ND	-
1,2-Dichloroethane	ND	ND	-	ND	ND	-
Carbon Tetrachloride	-	25 (J)	-	ND	ND	-
VOCs TdD (max. conc.)	-	1300 (J)	-	ND	ND	-
<b>SVOCs (µg/kg)</b>						
2-Methylphenol	ND	ND	-	ND	ND	-
4-Methylphenol	ND	ND	-	ND	ND	-
2,4-Dimethylphenol	ND	ND	-	ND	ND	-
Fluorene	ND	14,000 (BJ)	-	ND	ND	-
2-Methylnaphthalene	ND	31,000	-	ND	ND	-
Naphthalene	ND	4,100 (J)	-	ND	ND	-
Phenanthrene	950	75,000	195	ND	ND	-
Anthracene	ND	2,800 (J)	-	ND	ND	-
Benzo(a)anthracene	ND	39,000 (J)	-	ND	ND	-
Benzo(b)fluoranthene	2,230	29,000 (J)	165	ND	ND	-
Benzo(a)pyrene	ND	39,000 (J)	-	ND	ND	-
Di-n-butyl phthalate	ND	ND	-	2,200	ND	-
Acenaphthene	ND	ND	-	ND	ND	-
Dibenzofuran	ND	12,000 (J)	-	ND	ND	-
Pyrene	1,100	110,000	194	ND	ND	-
Chrysene	710	60,000	197	ND	ND	-
SVOCs TdD (max. conc.)	-	300,000 (J)	-	-	17,000 (J)	-
DBP/DBP (mg/kg)	150,300	500,000	110	140	ND	-
<b>Total Metals (mg/kg)</b>						
Aluminum	-	10,100	-	-	8,220	-
Antimony	ND	ND	-	ND	ND	-
Arsenic	25.6	127	133	3.0	3.7	21
Barium	105	193	59	20.2	87.1	100
Beryllium	0.53	.73 (B)	34	ND	39 (B)	-
Cadmium	4.20	82 (B)	143	0.50	ND	-
Calcium	-	59,500	-	-	25,200	-
Chromium	89.0	44.5	69	4.03	10.1	85
Cobalt	-	6.5 (B)	-	-	2.5 (B)	-
Copper	-	51	-	-	3.7 (B)	-
Iron	-	18,800	-	-	5,200	-
Lead	253	357	34	2.5	4.3	33
Magnesium	-	9,600	-	-	9,170	-
Manganese	-	322	-	-	77.9	-
Mercury	ND	ND	-	ND	ND	-
Nickel	37.3	18.2	65	6.5	4.1 (B)	45
Potassium	-	4,130	-	-	1,210	-
Selenium	ND	ND	-	ND	ND	-
Silver	0.96	0.99 (B)	3	2.5	ND	-
Sodium	-	1,340	-	-	633 (B)	-
Thallium	-	ND	-	-	ND	-
Vanadium	15.0	25.4	52	-	30.6 (B)	-
Zinc	101	115	13	11.0	15.6	35

Notes: ND = not detected

TICs = tentatively identified compounds. Values listed represent the estimated concentration of the highest TIC present in the sample.

RPD = relative percent difference between Navajo's and PRC's results for sample split.

=  $100|(X_1 - X_2)/X_{\text{mean}}|$ , where  $X$  is the measured concentration.

CLP Data Qualifiers: J = estimated value B = analyte that was also detected in the laboratory blank



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202-2733

MAR 19 1991

RECEIVED  
MAR 22 '91

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. Jack P. Reid, President  
Navajo Refining Company  
501 E. Main Street  
Artesia, New Mexico 88210

NAVAJO REFINING CO.

RE: RFI Phase II Workplan - Navajo Refining Co.  
NMD048918817

Dear Mr. Reid:

We have completed our technical review of your RFI Phase II Workplan submitted on November 1, 1990, and have determined the Report to be deficient. A list of deficiencies is enclosed for your review.

You shall have 30 days from the receipt of this letter to submit a modified Workplan which addresses the enclosed deficiencies. If this modified Workplan is not approved, we may make further modifications as required. Submission of grossly deficient RFI Workplans may subject the Permittee to enforcement action under Section 3008 of RCRA.

Also, the Region recommends that Navajo schedule a meeting so that the details of these deficiencies can be discussed.

If you have any questions concerning this matter, please contact Richard Mayer of my staff at (214) 655-6775.

Sincerely yours,

*Jack Davis*

for Allyn M. Davis  
Director  
Hazardous Waste Management Division

Enclosure

cc: Kathy Sisneros, NMEID

NAVAJO REFINING RFI  
PHASE II WORKPLAN DEFICIENCIES

1. The Phase II Workplan to determine the vertical and horizontal extent of contamination for the evaporation ponds is deficient. Additional wells horizontally and vertically (cluster wells) will be needed. Also, some wells presently in place around the ponds appear to be in poor condition and will need to be replaced.

In addition, the Agency will require Navajo to close the evaporation ponds within six months and will require a closure plan to the Agency for those units within three months from the date of this letter.

2. The Phase II Workplan to determine the vertical and horizontal extent of contamination along the Three-Mile Ditch is deficient. Navajo needs to (by some method(s)) determine areas where the ditch ponded and overflowed to determine the areal extent of contamination (unsaturated and saturated). This may include a combination of soil sampling, geophysics, soil-gas surveys, and ground water monitoring. New monitoring wells will be needed, reliance totally on hydropunch ground water technology is not acceptable. Also, some of the monitoring wells along the Three-Mile Ditch will need to be replaced because they are in poor condition.
3. Navajo needs to indicate all wells/windmills (this includes production ground water wells) within two miles of the evaporation ponds and the Three Mile ditch; and within a one mile radius of the refinery. Some of these wells need to be sampled to assure no contamination of any useable deep or shallow aquifers.
4. Navajo needs to submit a thorough plan in the Phase II Workplan to delineate and remediate ground water contamination in wells downgradient and upgradient of the Truck Bypass Landfarm. In addition, the source(s) for this contamination must be identified in the plan.
5. Navajo needs to submit a map and a narrative indicating/discussing the various plumes originating from the refinery and any offsite migrating plumes. Navajo should also include a discussion of all ground water remediation projects at the Refinery.
6. Region 6 will require Navajo to send all analytical samples to a laboratory which meets the terms and conditions stated in the statement of work for the Contract Lab Program. This includes reporting the highest concentration of Tentatively Identified Compounds (TIC) in every sample analyzed.
7. Since the approved Phase I Workplan included all the required information except for Phase II Workplan Section 3.1 to 3.2, pages 3-1 to 3-5, Navajo needs only to amend those above mentioned pages and the above required deficiencies.

TELEPHONE  
(505) 748-3311  
OIL CONSERVATION DIVISION  
RECEIVED



REFINING COMPANY

501 EAST MAIN STREET © P. O. DRAWER 159

EASYLINK  
62905278

FAX  
(505) 746-6410

'91 FEB 28 AM 9 15

ARTESIA, NEW MEXICO 88210

February 26, 1991

Mr. David G. Boyer  
Environmental Section  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

RE: BACKFILL OF ASPHALT PIT

Dear Dave:

This letter is to inform you that Navajo has begun to backfill the asphalt storage pit around Tank 433, where at one time as much as 110,000 Bbls of asphalt was impounded. Navajo had recovered and sold the contents of the impoundment in 1987. The pit was being retained for possible future needs, but since your approval of Asphalt/Crude Oil blending at Lea Refining in Lovington, no future need was foreseen.

The same earth removed when the pit was excavated is being used for backfill along with small amounts of soil being removed from the foundation sites of new units under construction. This information is provided per your request that Navajo notify you of any future activity at this site.

In other activity, you will be pleased to know that Navajo has completed removal of the heavy oil (tar) from our Heavy Oil Recovery Facility, and is now preparing the facility to begin recovering the contents of the pit at Tank 835. If you have any questions please call.

Sincerely,

David G. Griffin  
Supt. Environmental  
Affairs & Quality Control

DGG/pb

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

FAX  
(505) 746-6410

February 12, 1991

RECEIVED

FEB 14 1991

OIL CONSERVATION DIV.  
SANTA FE

Mr. Rodger Anderson  
NM Oil Conservation Division  
Land Office Building  
P.O. Box 2088  
Santa Fe, NM 87501

RE: Underground Process Wastewater Lines Older Than 25 Years

Dear Rodger:

Enclosed are copies of drawings depicting all underground wastewater lines believed to be older than 25 years.

Underground lines within the battery limits of the soon-to-be-idled Alkylolation and North Plant Crude Units have not been included per previous agreement.

Respectfully yours,

Zeke Sherman  
Environmental Engineer

ZRS/pb  
enclosure



# Memo

*From*

DAVID G. BOYER

*Hydrogeologist*

To Dave GRIKIN - 2/5

Here is a copy of my notes  
of yesterday's meeting. Let  
me know if there is any-  
thing misrepresented in my  
notes, since this will  
save me a letter.

T/ly  
Dave

827-5812

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal

Time 11:45

Date 2/4/91

Originating Party

DAVID Boyer

Other Parties

DAVID GRIFFIN  
Narajo Refining Artesia

Subject Discharge Plan Status - Narajo Artesia, Narajo  
Lorington

Discussion

I discussed with Griffin several outstanding  
issues related to the discharge plans:

1. Crude oil tank bottoms at Tank B35 pit have not been  
removed, and pit has not been closed. About 9000 barrels  
are to be processed beginning no later than March 15.  
Total time for removal is expected to be four - five months.
2. Final sewer schematic is on the way. O & S should  
receive in a couple of weeks at latest.
3. Consultant for Lorington Discharge Plan expected to be selected  
this week. Discharge plan by end of February likely!

Conclusions or Agreements

Distribution

Narajo DP  
Narajo-SU LOR. DP  
Dave Griffin

Signed

D. H. Boyer

TELEPHONE  
(505) 748-3311



# REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

FAX  
(505) 746-6410  
DIVISION

'91 JAN 18 AM 9 29

December 16, 1991

Mr. David G. Boyer  
NM Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

Dear Mr. <sup>David</sup> Boyer:

At your request, I have enclosed a copy of Navajo's Phase I Report concerning the investigations performed on the evaporation ponds, conveyance ditches and truck bypass landfarm. Also enclosed is a Phase II Workplan for additional work at the same sites and a copy of the annual analyses of Navajo's wastewater effluent.

Please contact either David Griffin or myself with any questions or comments.

Regards,

Zeke Sherman  
Environmental Engineer

ZRS/pb

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278

OIL CONSERVATION  
RECEIVED

'90 NOV 15



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

FAX  
(505) 746-6410

ARTESIA, NEW MEXICO 88210

November 13, 1990

Mr. Roger Anderson  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2988  
Santa Fe, NM 87504-2088

RE: ONCE-THROUGH FRESH WATER COOLING DISCHARGE

Dear Mr. <sup>Roger</sup>Anderson:

This letter is follow up to our conversation of Tuesday, November 13, 1990, concerning discharge of fresh water to Eagle Draw. On Saturday, November 10, 1990 a leak developed in the cooling water circulation lines at the Powerformer. This unit had just started up after a scheduled maintenance turnaround and is susceptible to significant damage during unscheduled shutdowns and startups. In order to keep the unit online while the cooling water system was taken out of service for repair, fresh potable water from fire hydrants was hooked up for a once-through cooling supply. The amount of cooling water normally circulated through this unit is 2,000 gpm, but by cutting back where possible and taking advantage of the colder fresh water temperature the flow was cut down to around 1000 gpm. Navajo's waste water treatment system does not have the capacity to take an additional flow in the range of 1000 gpm for anything more than a short lived storm event. It was therefore necessary to discharge this flow to Eagle Draw. There were no water contaminants discharged as the exchangers had just been cleaned and leak tested during turnaround. Inspection of the discharge revealed it to be crystal clear and oil free.

The leak was repaired by 10:00 a.m. Tuesday, November 13, 1990, and the discharge to Eagle Draw, which lasted for 3 days was stopped. Estimated discharge volume was 4.3 million gallons.

If you have any questions please call me at 748-3311, extension 223.

Sincerely,

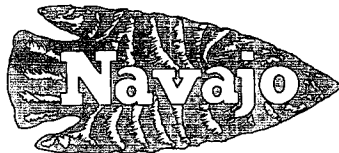
David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGG/pb

An Independent Refinery Serving . . . NEW MEXICO • ARIZONA • WEST TEXAS

11/15  
Called G. Griffin:  
Told him to report  
to EID Surface Water  
RA

TELEPHONE  
(505) 748-3311



OIL CONSERVATION DIVISION  
**REFINING COMPANY**

301 EAST MAIN STREET P. O. DRAWER 159  
NOV 7 1990

EASYLINK  
62905278

FAX  
(505) 746-6410

ARTESIA, NEW MEXICO 88210

November 12, 1990

TELECOPIED  
NOV 05 1990

Mr. David G. Boyer  
Environmental Bureau Chief  
Oil Conservation Division  
State Land Office Building  
P.O. Box 2088  
Santa Fe, New Mexico 871504

Dear Mr. Boyer:

This is in response to your October 16, 1990 letter regarding discharge plan commitments.

Navajo will use its best efforts to remove the oil and tank bottoms in the pit adjacent to Tank 835 by January 1, 1991. Navajo will close this pit as soon as the recovery effort is complete.

Navajo will complete a report identifying the location and approximate age of all underground waste piping which is in excess of 25 years old. Navajo, after completing new units in 1991, will be idling the north crude unit, the small reformer and its current alkylolation unit. It is Navajo's understanding that any underground waste piping in these units would not be required to be tested prior to the expiration of the discharge plan unless they are recommissioned.

Please advise if there are any questions regarding this matter.

Sincerely,

Matthew P. Clifton  
V.P. Economics/Engineering

MPC/sgp



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

October 16, 1990

CERTIFIED MAIL  
RETURN RECEIPT NO. P-918-402-446

Mr. Matt P. Clifton, Manager  
Economics and Engineering  
Navajo Refining Company  
P. O. Box 159  
Artesia, New Mexico 88210

RE: Discharge Plan GW-28  
Navajo Refinery  
Eddy County, New Mexico

Dear Mr. Clifton:

Roger Anderson and Bill Olson of the Oil Conservation Division (OCD) met with you and Zeke Sherman on August 3, 1990 in Artesia, New Mexico. The purpose of the meeting was to discuss the remaining unresolved issues in the review of the above referenced discharge plan application.

The following is a summary of the discussions and agreements reached during this meeting.

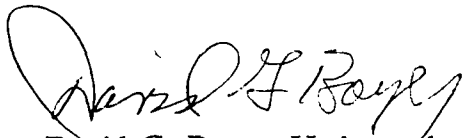
1. The oil and tank bottoms in the earthen pit adjacent to Tank 835 will be removed and the pit closed no later than January 1, 1991.
2. Verification of location and age of all below grade waste piping and a plan for integrity testing of all piping over 25 years old will be completed no later than January 1, 1991. A timetable for the completion of the integrity testing will be developed after verification of waste piping. However, all waste piping identified as being over 25 years old as of January 1, 1991 will be tested prior to the discharge plan expiration date.

Mr. Matt D. Clifton  
October 16, 1990  
Page -2-

If the items above correctly summarize your interpretation of the agreements reached during the August 3, 1990 meeting, they will be incorporated into the discharge plan as commitments. So that we can begin finalization of the discharge plan approval document, please let me know by November 5th if this interpretation is incorrect.

If you have any questions, please contact me at (505) 827-5812.

Sincerely,

A handwritten signature in cursive script, appearing to read "David G. Boyer".

David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB/sl

cc: OCD Artesia Office

SPILL REPORT (SR-1)  
(5 bbl. or Greater)

1. Time of Spill 3:00 AM/PM 8-1-90 Date
2. Time Spill Contained 3:10 AM/PM 8-1-90 Date
3. Location of Spill NORTH Tank farm.
4. Type of Spill (Material) C.B.O.
5. Quantity of Spill 30 bbl. Size of Spill (area) 20' X 50'
6. Disposition of Spilled Material Slop traps
7. How was the Spill Contained Yes
8. Did spill get into any drainage ditch, creek, arroyo, river, or waste water stream? YES ☐ NO ☒
9. If yes, did the spill leave company property or right-of-ways? YES ☐ NO ☐
10. Corrective action taken to prevent further spills: Shut valve
11. Name of person on duty at time of spill Tray Boyce
12. Physical location of responsible person at the time of spill at location
13. Department Maintenance
14. Supervisor's Signature James Belling

- NOTE -

In order to comply with federal laws, the Navajo Refining Company must report all spills within 24 hours to the regional office of the EPA. This form must be filled out completely and returned to the office of the Chief Environmentalist whenever a spill occurs. If, due to location, you cannot return this form within 24 hours, call the information to the Chief Environmentalist Office and then forward the form.





STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

July 26, 1990

CERTIFIED MAIL  
RETURN RECEIPT NO. P-918-402-280

Mr. Zeke Sherman  
Environmental Engineer  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan Finalization for Navajo Refinery, GW-28

Dear Mr. Sherman:

The Oil Conservation Division (OCD) has reviewed your letters of July 5th and July 12th responding to and providing information requested in our May 22, 1990, letter. The current letter requests clarification of some of that information, and also notifies Navajo of a condition to be imposed at the time of discharge plan approval. Items in this letter are numbered as in our May 22, 1990, letter.

1. Navajo's stated "housekeeping procedures" to reduce wastewater leaks, and oil drip frequency are adequate. Navajo's routine inspections should be conducted on a frequent schedule, and, in addition, OCD will schedule inspections at least yearly to ensure compliance.
2. The plans for catchments and drainage construction at tanks 120, 132, 133 and 135 have been reviewed by OCD and are approved. Navajo shall complete construction of these modifications no later than August 1, 1991, and shall so notify OCD of completion by letter.
3. During the week of July 30, 1990, my staff will meet with you to discuss testing of the underground wastewater lines. At that time a completion and reporting schedule will be negotiated so that the testing is completed during the five-year period of the discharge plan.

4. Your response to our request for information on ownership of land adjacent to the unlined evaporation ponds is inadequate. You are directed to modify and resubmit drawing #102-29-D (Monitoring Wells, Effluent Evaporation Ponds) to include land ownership boundaries. For multiple owners, provide at least the name of the principal owner and indicate by "others" if additional partial owners are listed as owners of record.
5. Based on the content of EPA's letter of May 16, 1990, to Mr. David Griffin of Navajo concerning the RCRA Facility Investigation, EPA is requiring an extensive investigation of several solid waste management units including the existing and out-of-service evaporation ponds. The Phase II work plan, which is due to EPA on September 28, 1990, will detail the further efforts Navajo will take to define the nature, extent, magnitude and rate of migration of any contaminants from solid waste units. If information generated as a result of these studies shows that offsite contamination in excess of WQCC Standards or the presence of toxic pollutants has occurred and is continuing to occur, OCD will require Navajo to submit a discharge plan modification within 120-days of the date a report containing such information is provided to EPA. Such modification will provide OCD with detailed information on the steps Navajo intends to take to prevent further offsite releases, and to contain and remediate existing contamination.
- 6, 7 and 8. Navajo's response and the information provided are adequate for these items.
9. OCD agrees with this response. OCD will await completion of the EPA required studies before preceding further. See OCD response to Item #5.
10. As per our phone conversation July 20th, please clarify whether the June 11, 1990, ground water elevations listed in the table are actual elevations or whether some numbers are elevations at the bottom of dry piezometers.
11. Upon installation provide OCD with information and dates of any process or flow changes made to maintain effluent discharges to the evaporation ponds below 500 ppb benzene.

Submittal of the remaining requested information, and agreement on a schedule and method for testing underground wastewater lines will complete discharge plan review. Upon completion, we will issue plan approval for five years but with the condition shown in Item #5.

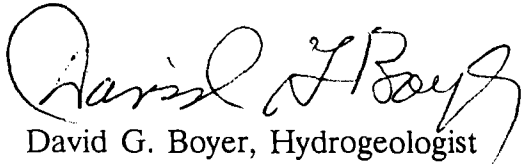
Mr. Zeke Sherman

July 26, 1990

Page -3-

If you have any questions, please contact me or Roger Anderson at 827-5812 or 827-5884.

Sincerely,

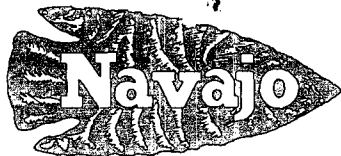
A handwritten signature in cursive script, appearing to read "David G. Boyer".

David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB/sl

cc: OCD Artesia Office

TELEPHONE  
(505) 748-3311



REFINING COMPANY

501 EAST MAIN STREET P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

July 12, 1990

EASYLINK  
62905278  
FAX  
(505) 746-6410

Mr. David Boyer  
New Mexico Oil Conservation Division  
Land Office Building  
P. O. Box 2088  
Santa Fe, NM 87501

Re: Discharge Plan, GW-28

Dear Mr. Boyer:

I have enclosed copies of drawings for catchments and drainage construction at Tanks 130, 132, 133, and 135, as requested. I have also enclosed copies of the as-built drawing and completion report for the installation of Evaporation Pond No. 6. This should satisfy the remaining information requests from your May 22, 1990 letter.

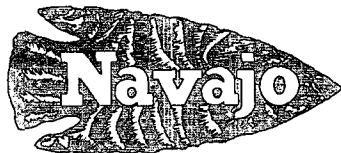
If I can be of any further assistance, please do not hesitate to contact me.

Regards,

Zeke Sherman  
Environmental Engineer

ZRS:tjc  
Encls.

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

EASYLINK  
62905278

FAX  
(505) 746-6410

ARTESIA, NEW MEXICO 88210

July 5, 1990

RECEIVED

JUL 10 1990

OIL CONSERVATION DIV.  
SANTA FE

Mr. David G. Boyer  
Hydrogeologist  
Environmental Bureau Chief  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87504

Re: Discharge Plan, GW-28

Dear Mr. Boyer:

Navajo Refining Company is submitting the following information in response to your May 22, 1990 letter. I would like to emphasize that the Company has diligently labored to correct all deficiencies found during past OCD inspections. We hope that this submittal will satisfactorily address the few remaining issues concerning the discharge plan and that this will clear the way for issuance of a provisional permit as we have previously discussed.

1. In general, Navajo "housekeeping procedures" consist of routine inspections of all process areas and storage tanks by operations and maintenance personnel. Whenever a wastewater, oil drip or leak at a tank, pump or other discharge point is discovered, such is reported via a work order request to the maintenance department. Repairs are scheduled as soon as possible and the area is policed of all stained dirt, etc. If it is the case that the point of discharge frequently leaks or drips and repairs or modifications cannot prevent this, then Navajo will construct suitable catchment or isolate the discharge by curbing and paving, whichever is appropriate.
2. Navajo will provide plans and specifications for catchment and drainage for potential leaks and/or drips at transfer pumps and valving manifolds associated with tanks 130, 132, 133 and 135 by July 31, 1990.
3. Navajo's efforts in this area have been directed to ascertain, to the best of our knowledge, what lines within our plant are in excess of twenty-five years old. To demonstrate the results of this effort we have enclosed copies of drawings highlighting the sewer lines which we believe are in excess of twenty-five years old. These drawings also note the diameter of each respective line.

In addition, we have enclosed Navajo's standard for sewer lines identifying the material to be used for such lines.

We will be happy to discuss your required testing frequency and suggested testing methods, as well as, any further information demands.

4. Based on information acquired in the past, we believe the enclosed map represents ownership interests in the land adjacent to the ponds, but are not in a position to attest to its validity or completeness.
5. I have enclosed a letter from EPA Region VI approving the said RFI with modifications. I will keep you posted on activities so that you may observe and/or participate and I will provide your office with copies of all correspondence concerning the investigation and in particular, that which concerns any potential impact on protectable water.
6. Enclosed are copies of the completion report and as-built drawings for the new pond construction as submitted to the State Engineer's office.
7. The absorbent boom was installed and has been in place since the month of October, 1989 as per the description provided in our application for exemption.
8. Navajo will comply with the schedule for sampling the OCD and MW series wells as presented in your letter. Sampling of the pipeline effluent will occur during the month of August, 1990 and annually thereafter. Effluent will be analyzed for the physical and chemical constituents you requested.

The above mentioned wells will be sampled for the EPA during this summer and we will submit those results to satisfy the sampling requirements for Summer 1990 under said schedule.

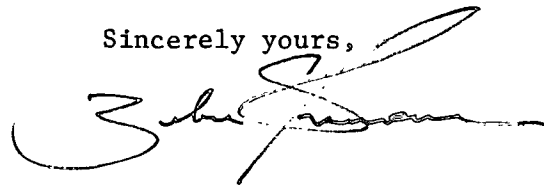
9. As you know, Navajo will be conducting a comprehensive RCRA facility investigation this summer. That investigation should determine whether protectable ground water at the evaporation ponds has been impacted or not. The HSWA permit requiring the RCRA investigation has provisions for corrective actions should the information obtained from the investigation warrant such. If the Environmental Protection Agency requires corrective measures at the evaporation ponds, then Navajo will at that time be able to discuss any necessary discharge plan modifications and/or remedial activity. We feel it is premature and speculative to discuss what remedial actions and what discharge plan modifications would be necessary at this time, but would be happy to discuss this further.

10. Enclosed is a table of water level elevations for Spring 1990 and a revised drawing showing the locations of MW-1 and MW-2.
11. At this point, we have analyzed our unit process waste water streams to identify which contain benzene, at what levels, and at what discharge rates. We are studying various alternatives to consistently maintain our effluent discharge to the evaporation ponds below the 500 ppb level.

I trust that this submittal will adequately address all of the OCD's information requirements. Should you have any questions concerning this response or any other associated activities, please do not hesitate to contact myself or Mr. David Griffin.

I look forward to completing the finalization of the Discharge Plan requirements and appreciate your patience and cooperations in this matter.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'Zeke Sherman', with a stylized, flowing script.

Zeke Sherman  
Environmental Engineer

ZRS/sgp

# CONTINENTAL OIL COMPANY

## PONCA CITY, OKLAHOMA

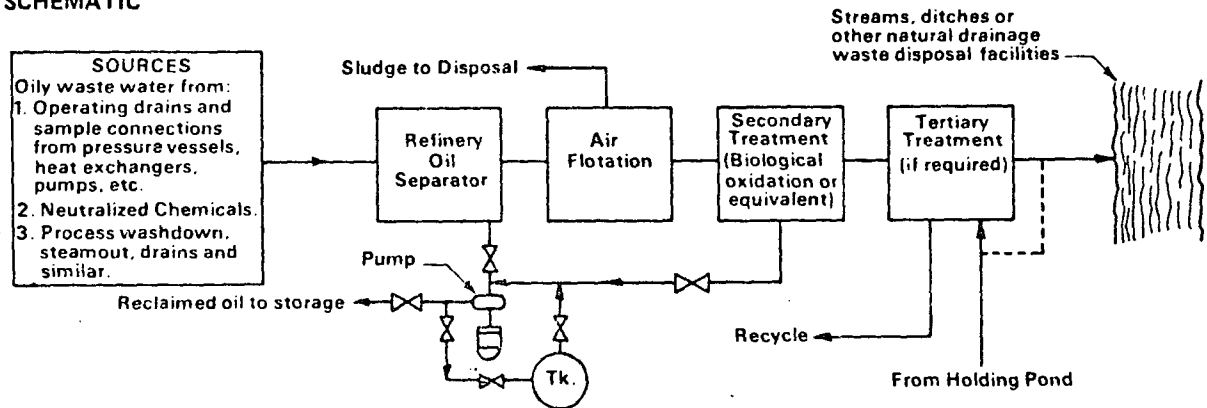
### CENTRAL ENGINEERING DEPARTMENT STANDARDS

STD O-3

ISSUE No.	DATE
3	12-15-72

## OILY WATER SYSTEMS

### 1. SCHEMATIC



### 2. OILY WATER SYSTEMS

2.1 Typical oily water systems as shown in Par. 1, terminate with final effluent disposal to natural drainage facilities, inland or coastal waterways, etc., or recycled to the plant.

Discharge regulations may be such that water recycle might be more desirable than having a plant effluent. These problems should be referred to:

Environmental Engineering Group  
Process Engineering Department  
Continental Oil Company  
Ponca City, Oklahoma.

2.2 Salvagable oil shall be reclaimed and returned to slop tanks for reprocessing.

2.3 Oil-water separation facilities shall be provided for separating oil and water at all sources of oily waste which are remote from the oily water sewer system. The recovered oil shall be pumped to slop storage or collected by tank truck. The oil free water may be discharged without treatment if it is of sufficient quality. Otherwise, secondary treatment is required.

### 3. OFFSITE FACILITIES, UTILITIES, ETC.

3.1 Streams originating from offsite facilities, such as loading racks, pump houses, dock slop systems, ship ballast systems, hydrocarbon blowdown system drains, etc. may also enter this system.

### 4. REFINERY OIL SEPARATORS

4.1 Refinery oil separators shall be designed in accordance with "API Manual on Disposal of Refinery

Wastes," latest edition. Parallel plate interceptors and corrugated plate interceptors are acceptable alternates.

### 5. RECOVERED OIL FACILITIES

5.1 Skimmed oil from oil separators, holding basins, and dock drainage shall be collected and pumped to suitably sized (normally 200-500 barrel) tanks equipped with heating coils. After separation of water, the oil shall be pumped to refinery slop tanks or crude storage unless further treatment is necessary. The separated water shall be returned to the process sewer.

### 6. BALLAST WATER SYSTEMS FOR TANKERS AND AT BARGE DOCKS

6.1 Tanker and/or barge ballast water shall be pumped from the vessels to a storage tank for oil removal. Recovered oil is sent to the slop oil tanks. Separated water may require treatment prior to discharge. Either a treatment facility at the dock or a tie-in to the plant treatment facility is required. Federal and state regulations should be reviewed to determine the water treatment scheme required.

### 7. TANKER AND BARGE DOCK DRAINAGE SYSTEM

7.1 Spilled and slopped material at tanker and barge loading docks shall be collected in suitable pans and drained to sump tanks located at docks. The collected material shall be pumped to oil recovery tanks and/or to the recovered oil sump at the oil separator.

### 8. SEWER SEALS

8.1 Sewer laterals shall be provided with liquid seals, either in manholes, sealed catch basins, or other suit-



**CONTINENTAL OIL COMPANY**  
**PONCA CITY, OKLAHOMA**  
**CENTRAL ENGINEERING DEPARTMENT STANDARDS**

**STD O-3**

ISSUE No.	DATE
3	12-15-72

able means, to isolate various areas and/or equipment where spills or leakage may occur.

**8.2** Areas having accumulations of flammable gases in the sewer mains shall have manhole covers sealed or gasketed to prevent gases from escaping from the sewer and shall be provided with a four-inch minimum size vent. Vents shall extend to an area of safe release.

**8.3** In areas having furnaces or other sources of ignition, manhole vents shall be run underground at least 100 feet from the source of ignition and at least ten feet above grade in a safe location. Lines shall be laid with enough slope to prevent liquid pockets.

**8.4** Seals shall be provided to isolate any noxious or toxic materials that may be spilled or drained into the sewer system.

#### **9. MATERIALS SPECIFICATIONS**

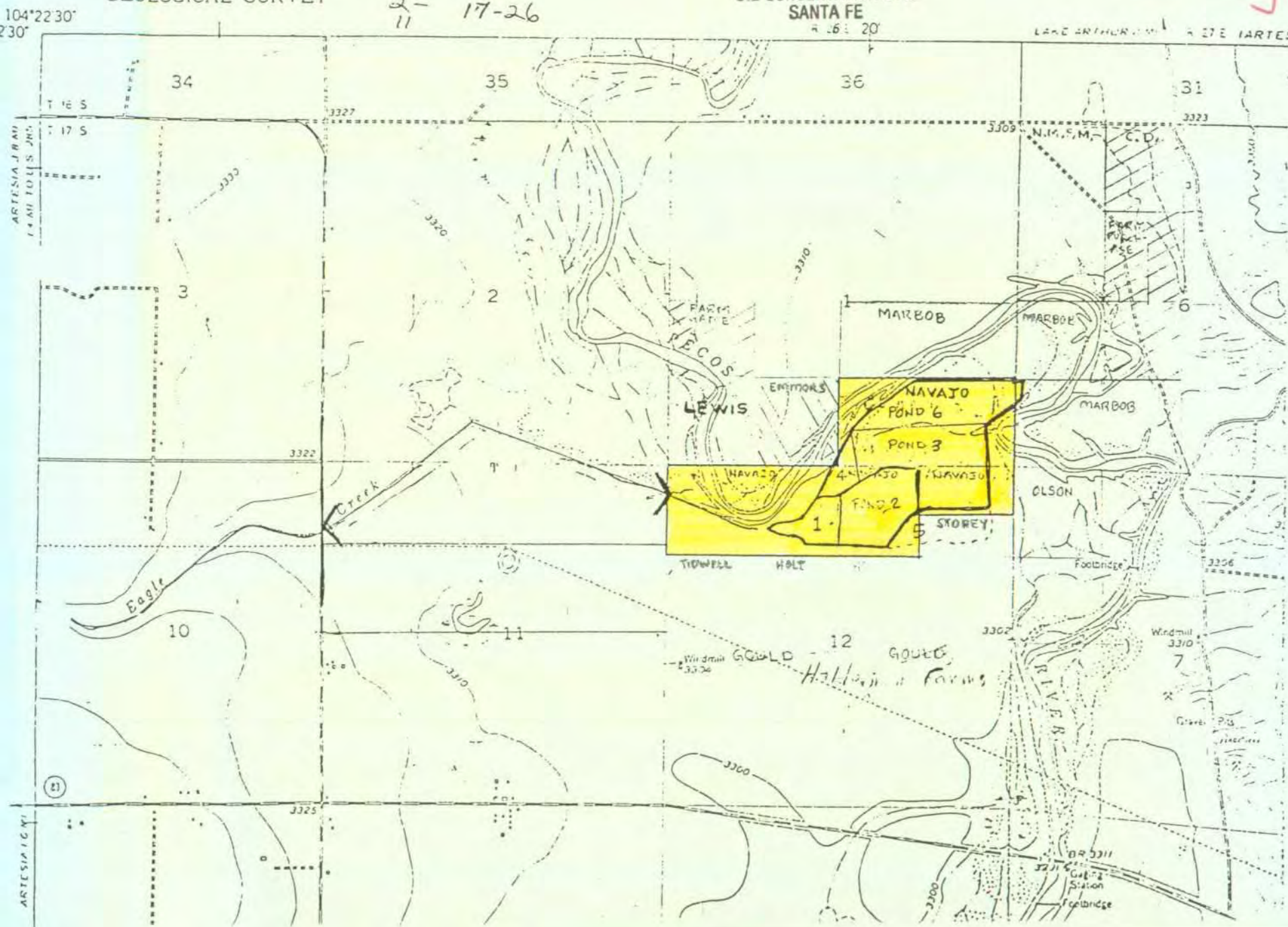
**9.1** Lines shall be welded carbon steel with the exterior painted one coat of asphaltum or equal.

**9.2** Before backfilling, all new sewer lines shall be hydrostatically tested with a 4-foot static head of water for a minimum period of one hour. In the event repairs or additions are made in the line following the pressure tests, the affected sewer shall be re-tested.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

OIL CONSERVATION DIV.  
SANTA FE

File Copy (4)



August 10, 1989

COMPLETION REPORT

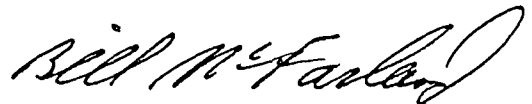
NAVAJO EFFLUENT EVAPORATION PONDS

Pond No. 6 has been completed. The dike has been built to the elevation of 3,314 feet and has been given final grading and shaping on the sides and the top. The top is approximately twelve (12) feet wide, allowing for vehicular traffic. There are access ramps to the top at the northwest, southeast and at the point where the new dike joins the old dike. The dike slopes are approximately 3:1 all around. The height of the dike from the pond bottom varies from five (5) feet on the west end to eleven (11) feet on the east end. The project has proceeded reasonably well and has been built substantially according to the plans.

The only problems were encountered at the beginning of the project and were reported in the May 10th report. Soils on site had at least 70%, passing the No. 200 screen indicating soils with high volume change. Reducing the specified density from 95% to 90% was necessary due to these soils. This change allowed the Contractor to meet density requirements in all areas of the keyway and dike except the East dike where the compaction equipment used caused pumping from the high ground water table in the corner. On the keyway of the East dike densities of 86% to 87% were achieved.

After discussions between the Soils Engineer and myself, the Field Engineer, we decided to begin backfilling the keyway after letting it set for two days in hopes of allowing the groundwater to stabilize. We felt that further work on the keyway would only aggravate the situation. We also felt the keyway as cut and compacted would meet the intent of the design and prevent any sliding of the dike. This solution allowed project to proceed and no further problems were encountered.

Bill McFarland, P.E.  
Project Monitor



File Copy (6)

# NAVAJO REFINING COMPANY

(6-11-90)

<u>POINT</u>	<u>ELEVATION</u>	<u>GROUND WATER ELEVATION</u>
P87-1	3308.17	3299.15
P87-2	3308.22	3298.22
P87-3	3308.74	3298.37
P87-4	3307.14	3298.02
P87-13	3306.47	3298.64
P87-14	3306.60	3297.75
P87-15	3306.52	3298.75
P87-16	3304.78	3297.28
P87-17	3306.91	3297.70
P87-19	3306.99	3297.51
MW-1	3311.93	3302.89
MW-2	3311.36	3304.07
MW-3	3308.42	3300.55
MW-4	3310.81	3300.19
MW-5	3307.27	3299.27
MW-6	3311.85	3300.93
MW-7	3306.15	3299.61
OCD-1	3312.68	3305.18
OCD-2	3312.68	3302.15
OCD-3	3312.50	3302.50
OCD-4	3312.23	3302.29
OCD-5	3310.08	3301.85
OCD-6	3309.93	3302.39
OCD-7	3309.25	3303.17
OCD-8	3308.05	3299.88

FILENAME: EVAP-POND

File copy 10

File copy (10)

<u>POINT</u>	<u>COORDINATE</u>		<u>ELEVATION (Top of Pipe)</u>
	NORTH	EAST	
BM INLET BOX			3311.50
NE COR. SEC. 12	10,000.00	10,000.00	
E $\frac{1}{4}$ COR. SEC. 12	7,346.48	10,000.77	
P87-1	7,860.98	7,066.33	3308.17
P87-2	7,877.45	8,050.46	3308.22
P87-3	6,860.52	6,039.77	3308.74
P87-4	6,906.30	7,069.94	3307.14
P87-13	9,017.22	10,083.78	3306.47
P87-14	8,013.55	10,105.91	3306.60
P87-15	7,874.05	8,882.25	3306.52
P87-16	9,081.67	9,081.67	3304.78
P87-17	6,980.05	10,043.43	3306.91
P87-19	6,891.51	8,077.86	3306.99
MW-3	8,853.34	7,059.28	3308.42
MW-4	8,492.40	7,086.25	3310.81
MW-5	8,662.74	8,302.43	3307.27
MW-6	8,836.92	6,389.77	3311.85
MW-7	8,865.34	9,272.82	3306.15
OCD-1	11,151.77	8,123.67	3312.68
OCD-2	11,446.35	8,713.04	3312.50
OCD-3	11,926.99	9,580.72	3312.77
OCD-4	12,510.53	10,450.08	3312.23
OCD-5	11,492.04	10,851.91	3310.08
OCD-6	10,949.30	10,096.57	3309.93
OCD-7	10,584.02	9,617.71	3309.25
OCD-8	9,386.15	9,933.91	3308.05
MW-1	9,549.28	5,190.28	3311.93
MW-2	10,388.88	7,361.11	3311.36

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

May 22, 1990

CERTIFIED MAIL  
RETURN RECEIPT NO. P-918-402-249

Mr. David G. Griffin, Superintendent  
Environmental Affairs  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: Finalization of Discharge Plan Requirement For Navajo Refinery, GW-28

Dear Mr. Griffin:

During review of previous correspondence relating to deficiencies found during Oil Conservation Division (OCD) inspections, the OCD requested information and/or commitments listed below were found not to have been submitted to OCD. **You are requested to respond to the information requests in this letter within 30 days of receipt except for the material requested in Item 2.**

1. Navajo has provided only a partial response to OCD's request of August 3, 1987 for submittal of proposed housekeeping procedures to repair and/or isolate by curbing and paving, small wastewater and oil drips and leaks at tanks, pumps and other discharge points. Many drips and leaks were observed at several locations during the April and May 1987 inspections. Examples included the pumps at the carbon black loading area, diesel loading area, and the transfer pump south of tank 135.

Partial information satisfying this request was submitted on December 23, 1988. The specific examples listed in the OCD request were addressed, however, general housekeeping procedures to address leaks, spills or other discharges not identified during the inspection was not included. **Submit proposed housekeeping procedures to repair and/or isolate by curbing and paving, small wastewater and/or oil drips and leaks at tanks, pumps, and other discharge points.**

2. Provide plans and specifications for catchment and drainage at south division tanks and associated transfer pumps, specifically tanks 130, 132, 133, and 135. Originally, Navajo committed to completion of work in 1989. However, the date for submission of plans to OCD was later changed to June 30, 1989. These plans have not yet been provided. **Provide these plans by July 31, 1990.** OCD will require a completion time of no more than 1 year from OCD approval of the plans.
3. OCD will require testing of wastewater lines over 25 years old for significant leaks. At the February 11, 1988 meeting Navajo agreed that by July 1, 1989, a listing and map of known plant sewer and drain lines carrying wastewater to treatment plant would be provided to OCD. The listing was to include pipeline age, diameter and composition; and process sources to lines. This information has not been furnished OCD. **Provide the sewer and drain line listing, the proposed testing procedures and the testing schedule.**
4. Over the past several years, OCD has encouraged Navajo to purchase parcels of land adjacent to the ponds to provide a buffer in the event of waste fluid migration. Since Navajo has not been able to accomplish this, OCD is requiring information on ownership of specific land surrounding the pond. **Provide a map showing all land ownership (include Navajo's) of the S/2 of Section 1, Township 17 South, Range 26 East; of the N/2 of Section 12, Township 17 South, Range 26 East; of the SW/4 of Section 6, Township 17 South, Range 27 East, and of the NW/4 of Section 7, Township 17 South, Range 27 East, N.M.P.M.**
5. OCD has previously expressed concern over possible horizontal migration of waste fluids to the southeast of the ponds, and concern over possible downward vertical migration in the shallow surficial sediments. Also, EPA has required that a RCRA facility investigation be made under the 1984 Solid Waste Amendments to RCRA. Such an investigation is proposed to include a study of the wastewater ponds. OCD's comments on the work plan were given in a January 4, 1990, letter to Richard Mayer of EPA. If the study incorporates and addresses OCD's comments and concerns, Navajo can submit those results in lieu of performing additional ground water study for OCD. However, if the EPA study results show protectable water being harmed by Navajo's discharges, Navajo will be required to modify the discharge plan to rectify the situation. This will be included as a condition of D.P. approval. **Provide copies of Navajo/EPA correspondence on this matter.**
6. **Provide a copy of the as-built completion report submitted to the State Engineer as a condition of their approval of Pond 6.**



7. In response to OCD's requirement to net ponds to prevent migratory bird loss, on August 28, 1989, Navajo submitted OCD Form 134 (Application for a Exception to Division Order R-8952). On the form Navajo committed to installation of a floating absorbent boom at the wastewater pipe outlet to intercept and contain any floating oil. Boom installation will provide compliance with this order. **Has the boom been installed? If not, provide OCD with the intended installation date.**
8. Effluent from the pipeline shall be sampled annually where it enters the ponds. Field pH and conductivity shall be measured. Analysis shall include BTEX, major cations/anions plus fluoride, WQCC metals and PAH's. OCD will require that the following wells be sampled on an annual or semi-annual basis beginning this summer (1990). To provide adequate coverage and provide warning of a possible problem, especially with Benzene, a staggered schedule is suggested:

	Summer '90	Winter '90-'91	Summer '91
MW-1	x	-	x
MW-2	x	-	x
MW-4	x	x	x
MW-5	x	x	x
MW-6	x	x	-
MW-7	x	x	-
OCD1	x	x	-
OCD2	x	-	x
OCD3	x	x	-
OCD4	x	-	x
OCD5	x	x	-
OCD6	x	-	x
OCD7	x	x	-
OCD8	x	-	x

If the wells are sampled for the EPA study this summer, those results may be submitted in lieu of a separate sampling required under this schedule. Subsequent year sampling will follow the staggered schedule shown. Please notify OCD two weeks in advance to provide us with an opportunity to split samples. Sampling shall include field measurements of water level, field pH and conductivity; and laboratory analyses for BTEX, major cations/anions plus fluoride, and in MW-4 and 6 naphthalene and mononaphthalene. **Reports of the water analyses shall be provided to OCD within six weeks of the date of sampling by Navajo.** Because MW-4 and MW-5 are located at the south property boundaries and have shown organic contamination previously, they will be monitored semiannually.



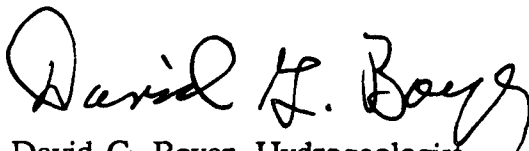
May 22, 1990

Page -4-

9. What remedial action will be taken and what discharge plan modifications will be made in the event that monitoring shows that WQCC standards are, or may be exceeded in protectable ground water?
10. In accordance with commitments in your November 6, 1989 letter to OCD, report current (spring) water levels (with date and measurement) for the monitor wells and stabilized piezometers in the area between the ponds and US Highway 82.
11. On September 25, 1990, EPA's new hazardous waste limit of 500 ppb for benzene becomes effective. Waste streams having concentrations at that level or above become subject to RCRA Subtitle C requirements. In the discussion section of the federal Register notice establishing this date and limit (Federal Register, Vol. 55, No. 61, Thursday, March 29, 1990, p. 11830, enclosed), EPA states that the sampling point for evaluation of wastes in surface impoundments should not be based on measurements of the concentration in the impoundment, but instead be based on sampling at the point of generation. At Navajo this would be the treatment plant outlet (or the pipe outlet, since the system is closed until the pipe reaches the pond). This would make the first pond (at least) a hazardous waste disposal unit under EID jurisdiction instead of the current solid waste unit under OCD authority. Are you planning to remove benzene to under 500 ppb before discharge of effluent to the ponds, and, if so, how? You are reminded that end-of-pipe levels of benzene sampled in November 1987, June 1988, and July 1989 were 4400 ppb, 7440 ppb and 1200 ppb respectively.

If you have any questions regarding refinery information or requirements included in this letter, please contact Roger Anderson at 827-5854, or David Boyer at 827-5812 for disposal pond issues.

Sincerely,



David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

Enclosure

DGB/sl

cc: OCD Artesia Office

system set forth in 40 CFR 262.11 is effective, the Agency believes that imposing a testing requirement does have some merit, in that it could increase the accuracy of determinations, could clarify the responsibilities of generators, and could facilitate compliance monitoring.

The Agency will continue to evaluate the comments on this issue as well as explore other options for a testing requirement. At present, however, the Agency is not yet ready to go forward with a testing requirement based on any of the options it has evaluated thus far. Should the Agency decide that an appropriate approach is available, it will propose and solicit comment upon the details of that approach in a separate rulemaking. In the meantime, the Agency believes that the existing determination requirement (as specified at 40 CFR 262.11), as well as the liability for incorrect determinations, is effective and practical.

#### *H. Applicability to Wastes Managed in Surface Impoundments*

As discussed above, in response to the proposed TC, EPA received many comments questioning the validity of applying the TC to wastes, including wastewaters, likely to be managed in surface impoundments. In response to commenters' concerns, on May 18, 1987, EPA published a Supplemental Notice of Proposed Rulemaking in the *Federal Register*, which requested comments and data on several issues related to the regulation of wastes managed in surface impoundments under the TC rule. The Agency also requested comment (assuming such an approach) on: (1) The criteria to be used to determine whether the surface impoundment scenario should apply to a particular waste, (2) the point at which concentration measurements should be made (e.g., at the point of generation or within the impoundment), and (3) how multiple surface impoundments should be handled under the TC rule.

Comments received in response to the notice concerning the surface impoundment management scenario are summarized and addressed in section III.A.2.c. Comments received in response to the notice, which addressed sampling point and multiple impoundment issues, are discussed below.

##### **1. Sampling Point**

In the May 18, 1987 notice, EPA requested comments on whether evaluations of wastes managed in surface impoundments should be based on measurements of the concentration in the impoundment or at the inlet to the impoundment. In response, some

commenters supported sampling at the inlet to the impoundment and stated that sampling the waste within the impoundment is not only contrary to Congressional intent, but conflicts with EPA's own regulations that require the determination of hazard to be made at the point of generation.

Other commenters, however, argued that wastes should be sampled within the impoundment or that the impoundment effluent should be sampled. Many of these commenters argued that measuring the concentrations in the impoundment more accurately represents the concentrations of hazardous constituents that pose a threat to ground water. Some commenters argued that evaluation of hazard should be based on impoundment effluent because concentrations of the wastewaters within the impoundment are approximately the same as the concentrations in the impoundment effluent.

If the Agency were to allow persons to make their determinations on the waste in the impoundment, it would raise questions that the Agency has not yet evaluated completely nor taken comment on. For example, in this situation, should the Agency actually require testing; if so, how often and what should be tested? Would such a result allow persons to land dispose of wastes that (but for the point of hazard determination) would be hazardous, contrary to Congressional intent? Would such a result allow persons to treat wastes without a permit and thus be inconsistent with Congressional intent? EPA concedes that, for some activities (e.g., closure), leachate quality may be more appropriately assessed by measuring concentrations at multiple sites within the impoundment.

The current rules require that the determination of whether a waste is hazardous be made at the point of generation (i.e., when the waste becomes a solid waste). (A waste must be a solid waste before it can be classified as a hazardous waste under RCRA.) EPA believes that determination of the regulatory status of a waste at the point of generation continues to be appropriate, especially since the Agency is not developing a separate mismanagement scenario or set of regulatory levels for wastewaters. To be consistent with other hazardous waste regulations and until the Agency addresses the above questions, EPA is retaining the existing approach of requiring sampling at the point of generation.

## **2. Multiple Surface Impoundments**

In the May 18, 1987 notice, EPA requested comment on how multiple surface impoundments or "treatment trains" should be handled under the TC rule. Some commenters favored regulating all surface impoundments in a treatment train as a single unit—if the first impoundment treats a hazardous waste, all impoundments would be required to comply with the RCRA regulations for hazardous waste treatment facilities. Other commenters, however, suggested that each impoundment should be regulated individually. Still other commenters stated that owners and operators should be required to determine whether the most upstream surface impoundment is treating wastes that exhibit the TC, but they should only be required to evaluate downstream impoundments if an upstream impoundment exhibits the TC.

As discussed above, the Agency has decided not to develop a separate regulatory scheme for surface impoundments. Thus, the Agency will continue to regulate all surface impoundments as individual units and will not pursue any of the other options discussed by commenters. Currently, under 40 CFR part 261, each surface impoundment in a series of multiple surface impoundments is regulated separately. If a surface impoundment receives or generates a hazardous waste, the owner or operator of the impoundment is required to comply with the RCRA regulations governing hazardous waste treatment, storage, and disposal facilities. On the other hand, if a downstream impoundment is not treating or generating a characteristically hazardous waste and upstream units have not managed, listed wastes, then the downstream unit is not subject to RCRA subtitle C requirements.

#### *I. Relationship to Other RCRA Regulations*

##### **1. Hazardous Waste Identification Regulations**

*a. Hazardous Waste Listings.* Under the June 13, 1986, proposal, the hazardous waste listings in subpart D of 40 CFR part 261 would not be affected. All the listings would remain in effect, including those listings that were based on the presence of TC constituents. It is EPA's intention that the hazardous waste listings would continue to complement the revised TC as they had the EPTC.

A number of commenters, however, argued that the TC should supersede certain hazardous waste listings. In

Region V Office of its preferred disposition of each submittal within 2 weeks. If the OEPA elected to withdraw the revisions, USEPA stated it would take no further action on them. If, on the other hand, the State did not withdraw them, USEPA stated that it would have to propose to disapprove them because they were requests to change applicable SIP requirements in areas lacking current attainment demonstrations. On April 4, 1985, the State notified USEPA that is still considered each of these SIP revision requests pending, and requested USEPA to approve them. Therefore, USEPA is proposing to disapprove these SIP revisions relaxation requests for the B.F. Goodrich, and Goodyear Plant I facilities in Summit County, Ohio.

USEPA is providing a 30-day comment period on this notice of proposed rulemaking. Public comments received on or before May 13, 1988 will be considered in USEPA's final rulemaking. All comments will be available for inspection during normal business hours at the Region V Office, address provided at the front of this notice.

Under 5 U.S.C. 605(b), I certify that this SIP disapproval will not have a significant economic impact on a substantial number of small entities, because the effect of this disapproval is to leave in effect existing emissions limitations. Therefore, there is no change or any impact on any source or community.

Under Executive Order 12291, today's action is not "Major". It has been submitted to the Office of Management and Budget (OMB) for review.

Authority: 42 U.S.C. 7401-7642.

Dated: February 11, 1987.

Valdas V. Adamkus,  
Regional Administrator.

Editorial Note: This document was received at the Office of the Federal Register on April 8, 1988.

[FR Doc. 88-8054 Filed 4-12-88; 8:45 am]

BILLING CODE 6560-50-M

#### 40 CFR Part 261

[FRL-3364-6]

#### Hazardous Waste Management System; Identification and Listing of Hazardous Waste

**AGENCY:** Environmental Protection Agency.

**ACTION:** Notice of availability of data and request for comment.

**SUMMARY:** On November 12, 1980, the Environmental Protection Agency proposed to amend the listings for two

of the hazardous wastes generated by the petroleum refining industry; these listings were promulgated in final form in that same issue of the *Federal Register*. Specifically, the Agency proposed to amend the listing of API separator sludge (K051) to read "Primary oil/solids/water separation sludge from the petroleum refining industry" and the listing of dissolved air flotation float (K048) to read "Secondary (emulsified) oil/solids/water separator sludge from the petroleum refining industry".

On February 11, 1985, the Agency noticed additional analytical information on wastes covered by the amended listings and published a clarification that the intended scope of the proposed listings was limited to primary, rather than secondary treatment. EPA has subsequently obtained additional waste composition data on these sludges; in addition, the American Petroleum Institute (API) has provided information relevant to further clarifying the scope of the proposed listings. Thus, EPA is today noticing the additional data and approaches to clarifying the proposed listings, and requesting comment on that data. The API data would distinguish primary separation and secondary separation (primary treatment) from secondary treatment based upon phenolic removal efficiencies, while the other approach is based on the physical and chemical properties of the sludges themselves. EPA is requesting comment on these alternative approaches for clarifying the scope of the proposed listings. Finally, EPA is soliciting comment on whether to include organic constituents, which the new data indicate are present in the primary treatment sludges, as additional listing criteria.

**DATES:** Comments on this notice of data availability must be received on or before May 31, 1988.

**ADDRESSES:** The public must send an original and two copies of their comments to: EPA RCRA Docket (S-212) (WH-562), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Place the Docket Number F-88-PTSA-5F on your comments. The Office of Solid Waste (OSW) docket is located in the sub-basement at the above address, and is open from 9:00 to 4:00, Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials by calling (202) 475-9327. The public may copy a maximum of 50 pages of material from any one regulatory docket at no cost; additional copies cost \$0.20 per page. Copies of the non-CBI version of sampling data and other support

information are available for *viewing and copying only* in the OSW docket.

**FOR FURTHER INFORMATION CONTACT:** The RCRA/Superfund Hotline at (800) 424-9346 or at (202) 382-3000. For technical information, contact Ben Smith, Office of Solid Waste (WH-562B), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460 or by phone at (202) 382-4791.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

On May 19, 1980, as part of its final and interim final regulations implementing section 3001 of RCRA, EPA published (in interim final form) a list of hazardous wastes (Subpart D of 40 CFR 261.32), which included five wastes generated by the petroleum refining industry (see 45 FR 33123). Among the listed petroleum refining wastes were "Dissolved Air Flotation (DAF) Float from the Petroleum Refining Industry" (K048) and "API Separator Sludge from the Petroleum Refining Industry" (K051). These wastes are generated as a result of the primary treatment of oily wastewaters. These particular listings were promulgated in final form on November 12, 1980 (45 FR 74884).

Subsequent to the May 1980 rulemaking, a rulemaking petition was submitted by Envirex, Inc. which argued that any petroleum refining sludge resulting from primary or secondary oil/solids/water separation (both of which are primary treatment) should be included in the listing because all such sludges would be similar in composition regardless of the equipment or method used in the separation step. After evaluating the rulemaking petition, the Agency proposed (also on November 12, 1980 at 45 FR 74893) that the K048 and K051 listings be amended to read, respectively: "Secondary (emulsified) oil/solids/water separator sludge in the petroleum refining industry"; and "Primary oil/solids/water separation sludge in the petroleum refining industry".

Commenters on the 1980 proposal expressed two major areas of concern. First, they believed the proposed amendment to the K048 (secondary separation) listing to be sufficiently vague that the proposal could be read to apply to biological treatment systems (which are considered secondary treatment), not just to sedimentation and flocculation systems. Secondly, commenters believed that the Agency had not demonstrated that the various categories of units potentially subject to the expanded listing possessed lead and

chromium at levels of concern. Based on these concerns, the Agency embarked on a comprehensive methods-development and waste-characterization effort to further substantiate the bases for expanding the listings. In order to conserve Agency resources and to minimize the information gathering burden on the regulated community, EPA simultaneously gathered data on the levels of toxic organics which would be found in the wastes subject to the proposed listing.

After the passage of the Hazardous and Solid Waste Amendments (HSWA) of 1984, the organic constituent data became even more valuable. In particular, HSWA requires all petitioners interested in delisting a hazardous waste to test the waste for all Appendix VIII (hazardous) constituents. Inclusion in the listing of all constituents that are typically present at levels of concern facilitates petitioner identification of the types of pretreatment which might successfully render a waste non-hazardous and delistable.

Having gathered the necessary information, the Agency published a Notice of Data availability on February 11, 1985. These data consisted of organics and metals analyses on wastewater treatment sludges from the following sources:

- Storm runoff ponds,
- Primary settling ponds,
- Flocculation tanks,
- Sumps,
- Emulsion tanks,
- Induced air flotation tanks,
- Evaporation ponds,
- Equalization ponds,
- Clarifiers,
- Cleaning chemical pits,
- Ponds with an oil skimmer

The data from these sources showed sludges with lead and chromium levels similar to the levels found in sludges from API separators and DAF units. In addition, the organic constituents, found included benzene and toluene at concentrations as high as 4600 and 11000 ppm (dry basis) respectively, and benzo(a)pyrene, chrysene, and pyrene at maximum concentrations ranging from 600 to 1700 ppm.

The Agency also took advantage of the opportunity afforded by the notice to reaffirm the scope of the listing and to solicit further comment on the clarity of the listings, stating that the final listings would apply only to wastes from primary wastewater treatment processes, and not to wastes from secondary wastewater treatment such as sludges from biological oxidation.

The notice indicated that this listing definition would be accomplished in the final rulemaking by consolidating the K048 and K051 listings to read, "sludge from primary wastewater treatment in the Petroleum Refining industry". This would eliminate possible confusion of secondary separation as secondary treatment. In so doing, the Agency was not altering the scope of the proposal, nor abandoning either listing. Rather, the Agency was pointing out the equivalency of the two activities generating the proposed wastes (i.e., primary and secondary oil/water/solids separation) to the activities which might be known as primary treatment at a petroleum refinery.

Comment received on the Notice of Data Availability suggested that the Agency had not provided information on units which were "incidental" generators of sludge (e.g. ditches and flow equalization basins), which might be covered by the proposed listing. Commenters also expressed concern that the clarification presented in the 1985 notice could be erroneously construed to expand the scope of the proposed listing to ponds used for secondary and tertiary treatment in those systems where biological treatment was not clearly defined. Their confusion derived, in large part, from the tendency of many refineries to use serial settling/oxidation ponds that could be considered primary or secondary treatment, depending on the quality of the preceding primary treatment units and how conscientious the refinery was in keeping suspended and emulsified oil out of the units. All of these comments will be addressed in the final rule.

Subsequent to the 1985 notice, the Agency conducted additional sampling in an attempt to identify and characterize differences between settling/oxidation ponds being used for primary and secondary treatment. From the sampling data, the Agency hoped to identify an indicator parameter (e.g., per cent oil and grease, or biochemical or chemical oxygen demand of the sludge or waste) that would define when a unit was predominantly secondary treatment.

The American Petroleum Institute (API) expressed considerable interest in this approach to resolving confusion over the scope of the listing. At the Agency's request, API provided information on phenolic removal efficiencies achieved in various categories of wastewater treatment units. Specifically, API provided data which suggested that a total phenolic removal efficiency of 80% or higher would indicate biological treatment. Because primary treatment units

appeared to have only minimal levels of biological activity, API believed this delineation to offer a clean indication of when secondary treatment had commenced in a particular system. API thus suggested that EPA adopt a definition of primary versus secondary treatment based upon phenolic removal efficiency.

Believing that the API proposal had considerable potential, the Agency initiated another sampling program in the Fall of 1987. The purpose of today's notice is to describe the data gathered from this and all other sampling efforts subsequent to the February, 1985 notice, and to solicit public comment upon the data and upon the alternative approaches to distinguishing primary from secondary treatment in order to implement the 1980 proposal. The first of these two approaches is based on the API definition of secondary treatment by phenolic removal efficiency. The second approach distinguishes secondary treatment by reference to the oil content of the sludges, computed on a dry basis.

## II. Availability of Data

Since the close of the comment period on the February, 1985 notice, the Agency has gathered additional compositional information on process wastewater treatment units, stormwater ponds, ditches and other sources of sludge at petroleum refineries. The data collected by the Agency were gathered from the wastewater treatment facilities of 16 refineries. These data clearly demonstrate that lead and chromium levels in the primary treatment units are greater than the levels of those two constituents in the samples considered in the promulgation of the original K048 and K051 listings. In fact, regardless of the type of unit generating the sludge, lead and chromium levels were higher than those observed in the original study that supported the listings of API Separator Sludge and DAF Float. Table 1 summarizes this information; in addition, this Table also summarizes some of the data obtained on the presence of various toxic organic constituents in the various sludges. Based on this data, the Agency solicits comment on whether the toxic organic constituents should be included as additional bases for listing these sludges. The data, which supplement all previously noticed data, are available for public inspection in the RCRA Docket which is located in the sub-basement of the EPA Headquarters at 401 M Street.

Also available in the docket are flow charts summarizing the analytical

information on the sludges and wastewaters sampled at each refinery. Limited data on ground water quality from downgradient wells also have been included, as have all other available data on the sludges. The Agency has also included data submitted by API on phenolic removal efficiencies and the results of sampling conducted by the Agency to test the API approach.

### III. Clarification of Scope of the Proposed Listing

In proposing to amend the original K048 and K051 listings, the Agency had a clear concept of a primary oil/water/solids separation sludge and of secondary oil/solids/water separator sludge. The former applied to all "bottoms" generated in the primary treatment system associated with the

treatment of oily process wastewaters while the latter applied to all "floats" generated in the primary system. The intent of the proposal was to extend regulatory coverage to "... other petroleum wastes with similar compositions generated from processes and equipment other than API separators and DAF equipment." (See 45 FR 74893, November 12, 1980.)

TABLE 1.—AVERAGE CONSTITUENT CONCENTRATIONS

(Mg/kg, dry weight basis)

Category	Lead	Chromium	Benzene	Benzo(a) pyrene	Chrysene
Original Listing Data K048 + K051.....	25	165	NR	<2	NR
Post 1983 Sampling Data K048 + K051.....	390	680	110	16	45
Primary Treatment Sludges <sup>1</sup> .....	300	400	34	12	34

NR = Not reported due to unavailability of methods.

<sup>1</sup> Including oily stormwater ponds.

Commenters on the 1985 Notice of Data Availability requested that the Agency provide additional clarification of the scope of this proposed listing. The confusion on the part of the commenters seems to derive from three points. The first point relates to a misunderstanding about the Agency's definition of oily wastewaters for the purpose of these listings. Hence, when the Agency (see 50 FR 5637, February 11, 1985) indicated that storm runoff ponds were captured by the listing, some commenters concluded that non-contaminated surface runoff was included; this was not the case. The proposed listing has always been intended to apply only to sludges generated in the storage, transport, or treatment of oily wastewaters. The oily wastewaters generated at petroleum refineries are generally derived from process wastewaters (e.g. condensates, spent caustics, desalter waters, pump gland cooling water), tank drawoffs, cooling waters (from C6 and heavier service), process area drainage and ballast waters. While the Agency's subsequent sampling has shown that other units can be contaminated with the hazardous constituents, they were and are not within the scope of the proposal and will be considered for listing at a later date.

The second source of commenter confusion derives from the fact that primary treatment sludges may be deposited in parts of the treatment system that are not normally considered sludge generators. For instance, at certain refineries process wastewaters and storm waters are routed to a flow equalization basin without first passing through an API separator. This can

result in the accumulation of appreciable amounts of primary treatment sludge in the basin. Some commenters are confused about the scope of the listing due to the erroneous belief that the intent to deposit the sludge is required before the sludge can be a primary treatment sludge. Their belief is contrary to the rationale clearly put forth in the original proposal. The primary purpose of the proposal is to identify listings which would capture the sludges regardless of where they were generated in the system. Consequently, primary treatment sludges are intended to be subject to the listing, even if they are generated in a ditch carrying the raw wastewater to the first oil/water/solids separator.

The third area of commenter confusion centers around the industry's multiple uses of the term "secondary" as it applies to wastewater treatment at petroleum refineries. Clarifying the Agency's utilization of this term is an important motivation for this clarification of the proposed listing. Clarifying the proposed rules' definition is best accomplished by considering a generic example of a refinery wastewater treatment system.

Typically, refinery wastewater treatment systems consist of three stages, each of which has a discrete objective. The first of these steps, suspended oil and solids removal, is what the Agency refers to as primary oil/water/solids separation. This activity is generally conducted in one, or more, units. These units are characterized by the use of gravity separation and in place equipment for the removal of separated oil (e.g., slotted pipes and other skimmers, drums, and

ropes, as opposed to booms). However, intermediate units may exist in this treatment category which are intended to provide only solids removal or flow equalization capability. Primary oil/water/solids separation may be conducted in separators located exclusively at the central wastewater treatment plant or in combination with regionally located units that service only selected areas of the refinery. All units located upstream of a primary separation unit are also considered primary separation units.

The second stage of most refinery wastewater treatment systems is secondary oil/water/solids removal. The objective of this stage in the treatment process is to remove solids and emulsified oil that have low separation velocities. In a well designed system, this function is typically performed by an air flotation unit. Unfortunately, many more systems exist where this activity is performed in a series of ponds. This is unfortunate because these units are not efficient separators of the emulsified oil and solids. As a consequence, large amounts of acreage are dedicated to a function which might be achievable with a single unit and result in the generation of much less solid waste.

The third stage of refinery wastewater treatment is secondary, or biological, treatment. The objective of this treatment is the degradation of dissolved oil and other pollutants to levels suitable for water reuse or discharge. In a well designed system, this activity is conducted in an activated sludge or similar unit. However, some refineries use additional oxidation ponds to perform this function.

When one considers refinery wastewater treatment systems in the above context, the source of confusion become clear. Some commenters are confusing secondary oil/water/solids separation sludges with biological treatment sludges. The latter, although they may contain hazardous constituents at significant levels, were never intended by the Agency to be a part of this particular proposal. It is the sludges and floats generated by the first two categories of refinery wastewater treatment—namely, primary and secondary oil/water/solids separation sludges—that are the subject of the proposed listing.

The Agency did not itemize the factors which distinguish secondary oil/water/solids separation from biological oxidation because the distinction was believed to be clear for most refineries. Subsequent comment seems to suggest that the distinction is not clear to the commenters, especially at facilities where the oil and solids removal systems are not very efficient. While some of the factors in determining how many units perform primary treatment in these instances are clear (e.g., extent to which refinery contains oils and solids in the process areas, efficacy of oil traps and skimmers), there are also a wide variety of subtle factors that can come into play (e.g., prevailing wind direction, pond depth, short circuiting). The net effect of these many variables can be to inhibit the deposition of the primary treatment sludges and separation of the suspended and emulsified oils from the wastewaters.

Failure to remove oils and emulsions prolongs the primary treatment process since the presence of significant quantities of oil in the wastewaters inhibits bacterial growth and delays the onset of biological treatment. As a consequence, multiple units covering many acres may be used for primary treatment. Past and present data demonstrate that regardless of the number of acres and/or units dedicated to primary treatment, all units will continue to generate oily sludges which are similarly composed to the currently listed wastes. Because only the primary treatment units are covered by the original proposal, it is critical that individual refineries have a clear picture of where biological treatment commences in their systems. To address industry uncertainties surrounding which units will be subject to the listing contemplated by the 1980 proposal, the Agency is considering two approaches for describing the scope of the primary treatment sludge listing.

The first approach is based, in part, on a suggestion by API. API believes that secondary treatment is characterized by much greater levels of phenolic compound removal than will occur primary treatment. They further believe that the upper bound of the range of phenolic removal efficiencies for primary treatment units will consistently be beneath the lower bound of the range of phenol removal efficiencies for secondary treatment units. Therefore, the approach recommends that commencement of secondary (or biological) treatment in the oily wastewater system be defined by the first wastewater treatment unit to achieve an intermediate level of phenolic removal efficiency, probably in the 60-70 percent range. Total phenolic compounds would be measured by the 4-AAP method (SW-846 Method 9065).

Provided with the suggested approach, and included in the docket, are API data showing marked reductions in sludge benzene levels in secondary treatment units. The approach should work since phenolics (with their high water solubility) would not be removed by the physical treatment processes typically encountered at petroleum refineries. Significant phenol removals would not be seen until the water was exposed to the much larger bacterial populations of the secondary treatment basin. The suggested approach presumes a one time demonstration on the part of each refinery, unless the refining or treatment process is changed. However, since wastewater phenolic levels could be quite variable in the first steps of treatment, API has suggested that the demonstration be conducted over an extended period of time that reflects at least 25 independent residence times. The API believes that this volume of analytical effort should not be overly burdensome to refineries since nearly all refineries are already performing some on-site analysis of phenolics in wastewater.

The API did not provide details on recordkeeping. The Agency believes that the API approach would require that records reflecting the testing of the current system be maintained on-site by the refinery for as long as the wastewater treatment system is operational. Sampling records must include the following information: The name and address of the facility sample; the names and qualifications of the persons sampling the wastes; the dates of sampling; a description of the units and location from which the samples were taken; methodologies and equipment used to obtain representative samples; and a description of the sample

handling techniques, including techniques used for containerization, preservation, and chain of custody of the samples.

Testing records would include the name and address of the on-site or independent laboratory performing the tests of the wastes, the names and qualifications of the persons testing the wastes; the dates of analyses; and a description of the tests performed, with the results of the tests.

The Agency conducted additional sampling activities after receipt of the API proposal to independently verify its consistency with the Agency's originally proposed definition. Those data are included in the docket to facilitate commenter evaluation of the definition. Total phenolic removal efficiencies of up to 56 percent were observed in the primary treatment units. When total phenolic levels were in excess of 200 micrograms/liter, the initial biological treatment units achieved removal efficiencies in excess of 83 percent. Based on this information, the Agency would consider a total phenolic removal efficiency of 70 percent to be most consistent with the definition in the original proposal.

Unaddressed by API's approach are: Treatment of phenolic levels beneath the detection limit; and the treatment of stormwater devices, evaporation ponds, and units wherein chemical treatment is being performed. The Agency believes that maximum consistency with the proposal is ensured by addressing these potential issues in the following manner.

With respect to the treatment of phenolic levels near the analytical detection limit, wastewaters treated to this level are generally biologically treated wastewaters. Therefore, it is recommended that these levels be considered as indicative of a biologically treated wastewater and the unit considered a secondary treatment unit, unless the device is clearly a multipurpose one. An example of a multipurpose device would be a surface impoundment that has some portion of its surface sectioned off by weirs or other oil containment devices and a subsequent section with aeration to perform biological treatment. Treatment of such heterogeneous units under the API approach requires clarification.

The purpose of the original proposal is to expand the listing to primary treatment sludges, regardless of where they are generated. Multipurpose units are found at some refineries that perform both primary and secondary treatment. The Agency believes that consistency with the proposal is ensured by treating such units as if they were



multiple wastewater treatment units. In the case of the two section unit suggested above, testing would be conducted at the oil barrier and considered to be the effluent from the first unit and also the influent to the second unit. If the first section of the unit failed the phenol removal efficiency test, the impoundment would be considered a generator of the listed waste. If the first section passed the phenol removal test, then biological treatment would have commenced.

API's definition of secondary treatment does not directly apply to stormwater containment devices or to zero discharge units (e.g., evaporation ponds). API did address the subject of stormwater units separately. API's suggestion, which is consistent with the Agency's interpretation of the original proposal, is that units which do not receive any wastewater flows during dry weather are stormwater units and not oily wastewater treatment units. Evaporation ponds, on the other hand, may be a part of the primary treatment system. The Agency believes that the final determination with respect to these units should be linked to the amount of pretreatment upstream of these devices. Consequently, zero discharge ponds which are downstream of properly designed and operated air flotation units, or other forms of secondary oil/water/solids separation, are not primary treatment units.

The other categories of treatment not addressed by the API proposal are chemical treatment and carbon adsorption. Treatment with oxidizing agents (e.g., hydrogen peroxide and chlorine) has been demonstrated to achieve over 99 percent removal of phenolic compounds. Likewise, the use of activated carbon can greatly increase phenolic compound removal. Refineries using these techniques generally use them for wastewater treatment subsequent to biological treatment. However, it is possible for a refinery to use these techniques in the primary treatment system to temporarily boost phenolic removal efficiency to the level of the performance standard suggested by the API approach. The Agency believes that implementation of the API approach necessitates the testing of units in the absence of the two abovementioned types of treatment.

Comment is requested on the clarity and utility of the use of the above described phenolic removal efficiency approach to implement the 1980 proposal to list primary treatment sludges.

The second approach to clarifying the scope of the listing relates more directly to the properties of the separated

sludges and floats. The main feature which distinguishes a primary from a secondary treatment sludge is the presence of proportionally greater amounts of oil and emulsions in the wastes. Furthermore, the oily sludges uniformly contain the constituents of concern. The Agency's intent in the 1980 proposal was to modify the listings "... to reflect the hazardous character of the wastes themselves, rather than the type of equipment or process generating the waste." In other words, to regulate primary treatment sludges, regardless of where they separated from the wastewater in the system. Data are provided in the docket that illustrate the strong correlation between similar hazardous constituent levels in primary treatment sludges and the relative levels of dry weight basis oil in the sludges.

Data collected in support of the 1980 proposal also illustrate that all of the primary treatment sludges at a given refinery will contain distinctly higher levels of oil on a mass basis than will be found in the secondary treatment sludges at the same refinery. The Agency believes that the determination as to whether, or not, appreciable amounts of primary treatment sludge are contained in any unit must be made based on a review of the whole system. To identify all units which contain primary treatment sludges, one must first determine the percent oil content of all sludges at the facility which are clearly primary oil/water/solids separation sludges. As stated previously, primary oil/water/solids separation sludges are all sludges generated upstream of and including the last unit with stationary equipment for oil removal. In order to ensure consistent application of the test, all percent oil determinations would be made on a dry weight basis (i.e., less water content). Sludges generated in any subsequent units of the oily wastewater treatment system which have oil contents in excess of the minimum observed in the primary oil/water/solids separation units would be considered secondary oil/water/solids separation sludges and, hence, also covered by the primary treatment sludge listing.

Data are presented in the docket to illustrate the utility of this approach to characterizing the primary treatment sludge listing proposal. The data also demonstrate the high correlation of the relative oil levels in primary and secondary separation sludges with lead and chromium levels. Since a single method is not presented in SW-846 (*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*) for

the analysis of oil, solids and water content, a variety of SW-846 methods were examined. These data are provided in the docket. The Agency believes that implementation of the dry basis oil approach to characterize primary treatment sludges is best performed when oil, water and solids are determined in the following manner. Oil and grease is determined in the sludge sample by Method 9071 in SW-846. Percent solids are determined as the mass in the Soxhlet residue of Method 3540 using sequential tetrahydrofuran and toluene extractions. Water is determined by performing ASTM Method D-4377 on another aliquot of the original sample. A copy of the exact protocol followed is included in the docket.

If implemented, this alternative would be applied as a tool for ascertaining whether, or not, the sludges and floats generated in a unit were secondary oil/water/solids separation sludge, or a secondary treatment sludge. The test would be applied to all sludges and floats generated in the oily wastewater treatment system, exclusive of those generated in units which were clearly part of the primary oil/water/solids separation or biological treatment systems. In other words, units up to, and inclusive of, the last unit with stationary oil removal equipment are not an object of the comparison, but rather the basis for comparison of dry basis oil levels. All other wastewater treatment units in the oily wastewater treatment system would be tested, including intermittent recipients of oily wastewaters like combined stormwater basins. All sludges would be tested independently since a large number of factors can contribute to produce intervening units which do not contain a primary treatment sludge.

Because the purpose of the test is to distinguish between categories of treatment sludges, it would not be applied to units used exclusively for biological treatment. Units which the Agency considers to perform a clearly biological function are activated sludge systems, trickling filters and biodiscs. Units downstream of units which were clearly biological would not be tested, unless they received other inflows.

As was the case with the phenolic removal efficiency approach discussed previously, records on sludge testing and analysis would be maintained by the facility. Determination of the baseline dry basis oil level in the primary oil/water/solids separation sludges would be conducted on an annual basis, with records maintained for a period of three years. Other units

would require testing on a three year frequency and at interim points, if sludge is removed from the unit. Oil, water and solids testing and recordkeeping for sludges and units downstream of the primary oil/water/solids separation system is only required for those units which are not considered primary treatment units and those sludges which will not be managed as primary treatment sludges. The records to be maintained by the refinery are the same as specified previously in this notice for the phenolic removal efficiency approach.

Comment is requested on the clarity and utility of this approach to implement the 1980 proposal to list primary treatment sludges.

The Agency solicits comments specifically on the above data and clarifications. All comments must be received by May 31, 1988.

Date: April 7, 1988.

J.W. McGraw,

*Acting Assistant Administrator.*

[FR Doc. 88-8041 Filed 4-12-88; 8:45 am]

BILLING CODE 6560-50-M

## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 73

[MM Docket No. 87-618, RM-6133]

#### Radio Broadcasting Services; Fort Rucker, AL

**AGENCY:** Federal Communications Commission.

**ACTION:** Order.

**SUMMARY:** This document extends the time for filing comments and reply comments in a proceeding involving the proposed deletion of FM Channel 226A at Fort Rucker, Alabama. Cheryl Swaim, an intended applicant for the Fort Rucker allocation requested the additional time to conform with the window application closing date therefor to allow incorporation by reference of her application in comments she intends to file in the proceeding.

**DATES:** Comments must be filed on or before April 8, 1988, and reply comments on or before April 22, 1988.

**ADDRESS:** Federal Communications Commission, Washington, DC 20554.

**FOR FURTHER INFORMATION CONTACT:** Nancy Joyner, Mass Media Bureau, (202) 634-6530.

**SUPPLEMENTARY INFORMATION:**

### List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

Steve Kaminer,

*Deputy Chief, Policy and Rules Division, Mass Media Bureau.*

[FR Doc. 88-8077 Filed 4-12-88; 8:45 am]

BILLING CODE 6712-01-M

### 47 CFR Part 73

[MM Docket No. 88-123, RM-5939]

#### Radio Broadcasting Services; Grover City, CA

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule.

**SUMMARY:** This document requests comments on a petition by R & L Broadcasters, licensee of Station KOSZ(FM), Grover City, California, proposing the substitution of FM Channel 297B for Channel 297B1 and modification of its Class B1 license accordingly, to provide that community with a wider coverage area FM service.

**DATES:** Comments must be filed on or before May 26, 1988, and reply comments on or before June 10, 1988.

**ADDRESS:** Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, as follows: R & L Broadcasters, Attn: Rod B. Funston, 1234 Ramona Avenue, Grover City, CA 93433-2217.

**FOR FURTHER INFORMATION CONTACT:** Nancy Joyner, Mass Media Bureau, (202) 634-6530.

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's Notice of Proposed Rule Making, MM Docket No. 88-123, adopted February 25, 1988, and released April 5, 1988. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all *ex*

*parte* contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1231 for rules governing permissible *ex parte* contact.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

### List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

Steve Kaminer,

*Deputy Chief, Policy and Rules Division, Mass Media Bureau.*

[FR Doc. 88-8066 Filed 4-12-88; 8:45 am]

BILLING CODE 6712-01-M

### 47 CFR Part 73

[MM Docket No. 85-335; RM-4853]

#### Radio Broadcasting Services; Mt. Laguna, CA

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule; dismissal of proposal.

**SUMMARY:** This document dismisses a petition filed by Family Stations, Inc., seeking the allotment of a noncommercial educational FM channel at Mt. Laguna, California, based on the Commission's recent amendment of its Rules to provide for a "demand" system for such services located within 199 miles of the United States-Mexico border area. As a result, the Mt. Laguna proposal may be considered in the application context rather than the rule making process. With this action, the proceeding is terminated.

**ADDRESS:** Federal Communications Commission, Washington, DC 20554.

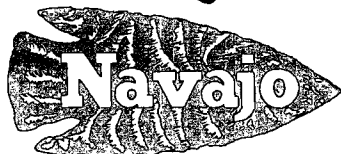
**FOR FURTHER INFORMATION CONTACT:** Nancy Joyner, Mass Media Bureau, (202) 634-6530. Questions related to the application filing process should be addressed to the Audio Services Division, FM Branch, Mass Media Bureau, (202) 632-0394.

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's Report and Order, MM Docket No. 85-335, adopted March 4, 1988, and released April 1, 1988. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC.

The complete text of this decision may also be purchased from the Commission's copy contractors International Transcription Service,



TELEPHONE  
(505) 748-3311



REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

May 21, 1990

EASYLINK  
62905278

FAX  
(505) 746-6410

Mr. David G. Boyer  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Re: Spill Notification of Oil Discovery

Dear Dave:

Per our conversation, enclosed is a spill report on the product discovered late last week while drilling monitoring wells for EID. Navajo will be gathering data from these new wells, along with existing wells, over the next couple of weeks in an effort to better clarify the source and extent. Navajo will keep you updated as more information becomes available.

Sincerely,


David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGGr/sgp

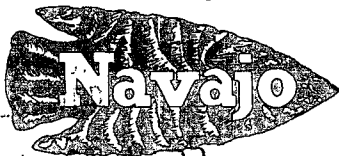
Enclosure

## NEW MEXICO OIL CONSERVATION COMMISSION

## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Navajo Refining Company				ADDRESS 23 AM 9 37 P.O. Drawer 159, Artesia, NM 88210			
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY Navajo Refinery							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) Artesia				SEC.	TWP.	RGE.	COUNTY Eddy
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK				501 East Main Street			
DATE AND HOUR OF OCCURENCE Unknown				DATE AND HOUR OF DISCOVERY 5/17/90			
WAS IMMEDIATE NOTICE GIVEN?	YES	NO	NOT REQUIRED	IF YES, TO WHOM Phoned D. Boyer 5/21/90			
BY WHOM				DATE AND HOUR			
TYPE OF FLUID LOST Appears to be a mix of gasoline and diesel.				QUANTITY OF LOSS Unknown		VOLUME RECOVERED	
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY				
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
Free product was discovered while drilling monitoring wells in the vicinity of the truck by-pass landfarm.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
The extent of hydrocarbon plume is not yet defined, nor has the source(s) been identified. One oil recovery well (RW #3) is in the area and is recovering product. Planning for further exploration is underway as well as analysis of product to determine its origin.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Industrial			
SURFACE CONDITIONS N/A	SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED 				TITLE Supt. EA:QC		DATE 5/21/90	
*SPECIFY				**ATTACH ADDITIONAL SHEETS IF NECESSARY			

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

FAX  
(505) 746-6410

'90 MAY 14 AM 8 55

May 10, 1990

Mr. David G. Boyer, Chief  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

RE: Land Acquisition - Navajo Evaporation Ponds

Dear Dave:

Navajo has finally resolved the ownership issue at the evaporation ponds. The dike along the Northwest edge of pond #4 has been relocated to clear the fraction of an acre corner not owned by Navajo. The small strip of new pond #6 that inadvertently encroached on Marbob property has been purchased. A copy of the deed is enclosed.

In addition, Navajo is attempting to acquire additional property in the area Northeast of pond #6, so that there will be no problems if ponds #7 and 8 are ever required to be built.

If you have any questions, please call.

Sincerely,

David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGG/pb  
enclosure

QUITCLAIM DEED

MARBOB ENERGY CORPORATION, a New Mexico corporation, for consideration paid, quitclaims to NAVAJO REFINING COMPANY, a Delaware corporation, P. O. Drawer 159, Artesia, New Mexico, 88210, the surface only of the following described real estate in Eddy County, New Mexico:

Township 17 South, Range 27 East, N.M.P.M.

Section 6: NW/4 SW/4 SW/4

WITNESS our hands and seals this April 30, 1990.

ATTEST:

MARBOB ENERGY CORPORATION

Ray Miller  
Secretary

By: John R. Gray  
President

STATE OF NEW MEXICO )  
: ss.  
COUNTY OF EDDY )

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET ○ P. O. DRAWER 159

EASYLINK  
62905278  
FAX  
(505) 746-6410

ARTESIA, NEW MEXICO 88210

April 23, 1990

Mr. David Boyer  
Hydrogeologist  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: North Colony Landfarm - Alternate Source  
Demonstration

Dear Mr. Boyer:

Enclosed is a copy of the Alternative Source Demonstration Navajo submitted to the EID concerning the NCL. It contains the most recent information on the hydrocarbon plume discovered in the area of the landfarm. I will update you as activities concerning further plume characterization and recovery efforts progress.

Should you have any questions, please contact me at (505) 748-3311.

Very truly yours,

Zeke Sherman  
Environmental Engineer

ZRS:tjc  
Encls.

RECEIVED

APR 25 1990  
OIL CONSERVATION DIV.  
SANTA FE

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

8:20

Date

4/10/90

Originating Party

Other Parties

Dr. Livingston (VET medicine)  
Artesia 746-6167

Dave Boyer O&G

Subject

Navajo Refinery - Flaring of Gas during  
yearly turnaround.

Discussion

Livingston called to complain of yearly discharge  
of "wet gas" during workover. It burnt back  
and sooty and lasts for a week or longer. He says he  
has talked to Refinery VP Bill Gray about this and  
they are talking about gas injection & storage temporarily  
during shut down. Says Norris FK 8562 stripper wells  
at 12-175-25E (owned by Livingston) are available. After  
the call I met with Mike Williams and David Catarach - Mike  
is aware of the problem and will talk to Gray then Livingston.  
Catarach says hearing will likely need to be held on

Conclusions or Agreements

The injection wells. Mike says may not be  
suitable - old & near city water wells. I suggest O&G letter  
to Navajo (after investigation) telling them flaring should be  
curtailed given lots of resource and environmental concerns  
and asking them to present plan for changing practices in future years.

Distribution

Navajo File, Mike Williams

Signed

David H. Boyer

I call Livingston back and tell him Mike will get back to him  
on the matter.



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

March 8, 1990

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**CERTIFIED MAIL**  
**RETURN RECEIPT No. P-106 675 304**

Mr. David G. Griffin  
Superintendent Environmental Affairs  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

Re: Diesel Fuel Spill

Dear Mr. Griffin:

The Oil Conservation Division has received your letter of March 1, 1990, providing information required under Section 1-203.A. of the Water Quality Control Commission Regulations. The information submitted satisfies the reporting requirements of 1-203-A. and is acceptable to OCD. Additional corrective action will necessarily await receipt and evaluation of the consultant's report on the incident. Provided that the investigation report is submitted in a timely manner, no further OCD action in this matter will be taken.

Sincerely,

DAVID G. BOYER, Hydrogeologist  
Environmental Bureau Chief

DGB/dr

cc: Robert G. Stovall, General Counsel  
M. Williams, OCD Artesia Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202-2733

OIL CONSERVATION DIVISION  
RECEIVED  
90 APR 8 AM 8 53

March 5, 1990

Mr. David G. Griffin  
Superintendent of Environmental  
Affairs and Quality Control  
Navajo Refining Company  
501 East Main Street  
Artesia, New Mexico 88210

Dear Mr. Griffin:

This is in response to your letter dated January 5, 1990, to Richard Mayer, regarding stabilization work being done at evaporation pond #1. As long as the work being done creates no environmental hazards (such as air emissions, etc.) and the work is contained within the unit boundary (Navajo ensures that no new solid waste management units or RCRA units are created), the Environmental Protection Agency has no problem with Navajo beginning the stabilization work. However, this activity must be in accordance with requirements in the State of New Mexico. Therefore, you must contact the New Mexico Environmental Improvement Division and other involved State agencies for their approval.

If you have any questions or comments, please contact me or Richard Mayer of my staff at (214) 655-6775.

Sincerely yours,

William Gallagher, Chief  
RCRA ALONM Permits Section

cc: ~~Mr.~~ David Boyer  
New Mexico Oil Conservation Division

Mr. Boyd Hamilton  
New Mexico Environmental Improvement Division



TELEPHONE  
(505) 748-3311



REFINING COMPANY

EASYLINK  
62905278

FAX  
(505) 746-6410

'90 MAR 5 AM 10 01 501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

March 1, 1990

Mr. David G. Boyer  
Environmental Bureau Chief  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

RE: Additional WQCC Regulation 1-203 Information

Dear Mr. Boyer:

The following information is provided per your letter dated February 22, 1990.

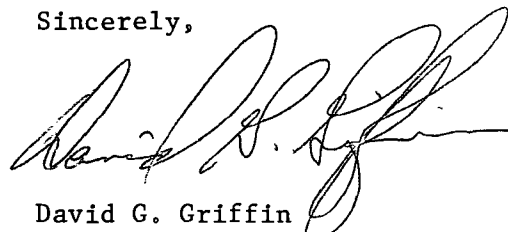
- 1.a. Mr. Virgil R. Langford  
Vice President of Refining  
P.O. Drawer 159  
Artesia, NM 88210  
(505) 748-3311
- b. Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88210
- c. The date, time, location and duration of the discharge are all unknown at this time. The discharge occurred sometime during the past 60 years, and probably originated in the vicinity of the North Division - North Tank Farm and Rail Loading Rack. As stated in my previous letter of February 7, 1990, an investigation is underway and Navajo is expecting a report from John Shomaker, Inc. before the end of March, 1990.
- d. The source and cause of the discharge have not been determined at this time. The Shomaker report should help shed light on this question.

- e. The preliminary analyses that have been completed to date, indicate the material to be a mixture of hydrocarbon products - possibly 75 - 85% Diesel, 15 - 25% Heavy Oil (possibly Carbon Black Oil). Please keep in mind this is only a first guess at the composition.
- f. An estimate of the volume is not known at this time. Recent samples from RCRA Monitor Well #34 at the North Colony Landfarm, where first indications were detected, yielded a decrease in hydrocarbon concentration to the point that no surface skim of oil is present, as was seen before.
- g. Mitigation of immediate discharge damage is not applicable in this case, but Navajo does intend to install at least one hydrocarbon recovery or corrective action well. Recovery well siting will be determined after review of the Shomaker report.

The work done to date investigating this problem consists of hazardous waste constituent analysis on RCRA Well #34, and an investigatory well boring program. Most samples collected to date are still undergoing analysis at both the Navajo Lab and ENSECO - RMAL in Colorado.

Since this problem was initially discovered as the result of routine groundwater monitoring at Navajo's RCRA permitted hazardous waste landfarm, the investigation work was started as part of a Corrective Action Plan under RCRA. The investigation has currently been expanded under Corrective Action to include an Alternate Source Demonstration. Once it became clear during the investigation that the landfarm was probably not the source of the contamination, and enough samples of hydrocarbon was collected from new borings, in addition to Well #34, to get preliminary data indicating a predominately Diesel Fuel composition, you were sent notice by way of the February 9, 1990 letter. NMOCD will be receiving a more complete report on the situation when it is completed in March.

Sincerely,



David G. Griffin  
Supt. Environmental  
Affairs & Quality Control



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

February 22, 1990

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-918-402-180**

Mr. David G. Griffin, Superintendent  
Environmental Affairs  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: Diesel Fuel Spill

Dear Mr. Griffin:

We have your letter of February 7, 1990 regarding the placement in service of evaporation pond #6. In your letter you also indicate that you have begun an investigation into the presence of additional diesel fuel under the refinery.

WQCC Regulation 1-203.A. requires you to give us oral notification as soon as possible after learning of a discharge and in no event more than twenty-four hours later. The regulation also specifies the information which must be provided, and a copy is attached. In addition, you are required to follow up the oral notification with written confirmation. It is your responsibility to comply with these regulations, and your letter dated February 19, 1985, is evidence of your awareness of this obligation.

You have failed to comply with these regulations. We will determine what action we should take against Navajo Refining Company for your violations, which are ongoing until you have complied. You are hereby directed to provide OCD with the required information within seven (7) days of receipt of this letter. That information must be in our office within the seven day period. You are also directed to immediately comply with all other provisions in the WQCC regulations regarding remedial actions.

In the future you will provide OCD with timely notification of the discovery of above or below ground spills, leaks or other discharges of product, chemicals wastewater or other contaminants. This requirement is to be incorporated in the discharge plan currently under review via the SPCC plan dated April 1988.

Mr. David G. Griffin  
February 22, 1990  
Page -2-

If you have any questions, please contact me at 827-5812.

Sincerely,



David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB/si

**Attachments**

cc: W. J. LeMay, Director, OCD  
R. Stovall, General Counsel  
M. Williams, OCD Artesia Office

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278

FAX  
(505) 746-6410



## REFINING COMPANY

501 EAST MAIN STREET ○ P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

February 7, 1990

Mr. David G. Boyer, Director  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

RE: New Evaporation Pond #6

Dear Mr. <sup>Dave</sup> Boyer:

This letter is to notify you that Navajo Refining Company placed Evaporation Pond #6 into service on February 1, 1990. There are no apparent problems at all with this new pond. The flooding of Pond #6 lowered the other ponds approximately a foot, giving a freeboard level of 4 to 5 feet on all perimeter dikes. Navajo is still awaiting written confirmation from the EPA in Dallas to start stabilization work on Pond #1.

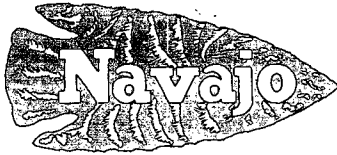
Navajo has begun an investigation of additional diesel fuel under the refinery. A geologist with John W. Shomaker, Inc., Bob Newcomber, and a drilling rig from Southwest Engineering are presently in the refinery working to define the situation. You will receive a report as soon as their investigation is complete.

Sincerely yours,

David G. Griffin  
Supt. Environmental  
Affairs & Quality Control

DGG/pb

TELEPHONE  
(505) 748-3311



REFINING COMPANY

501 EAST MAIN STREET ○ P. O. DRAWER 88

ARTESIA, NEW MEXICO 88210

OIL CONSERVATION DIVISION  
RECEIVED  
90 JAN 8 AM 8 59  
EASYLINK  
62905278  
FAX  
(505) 746-6410

January 5, 1990

Mr. David G. Boyer  
Environmental Bureau Chief  
NM Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Dave:

Enclosed you should find a copy of Navajo's letter to Rich Mayer, EPA, concerning commencement of Pond #1 stabilization work. Sorry I missed you during your recent visit, but hope none of you came down with the same flu I had.

Thanks for sending the paper you presented at the water conference in Roswell. It sure looks like you have your work cut out for yourself and staff.

If you have any problems or comments, please call.

Sincerely,

David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGG/sgp

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

January 5, 1990

EASYLINK  
62905278

FAX  
(505) 746-6410

Mr. Rich Mayer  
U.S. Environmental Protection Agency  
RCRA ALUMN Permit Section  
1445 Ross Avenue  
Dallas, Texas 75202

Re: Stabilization of Pond No. 1

Dear Mr. Mayer:

This letter is to notify you that Navajo Refining Company intends to begin stabilization work at evaporation pond #1 per the discussions held during your recent visit. The initial phase of this stabilization work will consist of dirt work to establish better access around the pond. Improved access is necessary for bringing in heavy equipment to begin probing the perimeter of the pond. Perimeter investigation will allow Navajo to determine sludge depths and bottom stability. Improved access will also allow easier and more thorough sampling for any RFI purposes.

The completion of this perimeter activity will allow Navajo to plot further work such as transpond access ways and grid areas in preparation for intensive tilling designed to degrade and stabilize the sludge in the pond.

Navajo will keep you informed of each step in the lengthy process of stabilizing the pond and will provide you with sketches and/or photos of work completed during each phase. The total stabilization work is anticipated to be a long drawn out effort contingent on site conditions, weather, sludge degradation rate, etc.

If you have any questions or comments, please contact me or Mr. Zeke Sherman of my staff. Navajo would like to get started on this work as soon as possible.

Sincerely yours,

David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGGr/sgp

cc: Dr. Joe Dauchy  
The Earth Technology Corp.

Mr. David G. Boyer  
NM Oil Conservation Division

*An Independent Refinery Serving . . . NEW MEXICO • ARIZONA • WEST TEXAS*



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

November 22, 1989

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-918-402-169**


Mr. Zeke Sherman  
Environmental Engineer  
NAVAJO REFINING COMPANY  
P. O. Drawer 159  
Artesia, New Mexico 88210

Dear Mr. Sherman:

We have received your November 6, 1989, letter which provides survey information on the monitor wells and piezometers. From our standpoint it is unfortunate that all but one of the ten piezometers were dry when measured. When they and the wells are remeasured next spring, please provide location coordinates and elevations for MW-1 and MW-2, and ground water elevations for these wells and OCD-1. Please show on the map the location of wells MW1 and 2 and where the pond elevation was measured.

Thank you for providing this additional information.

Sincerely,

  
David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

cc: OCD Artesia





ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

January 4, 1990

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

Mr. Richard Mayer  
Environmental Engineer  
RCRA ALONM Permits (6H-PS)  
EPA Region VI  
1445 Ross Avenue  
Dallas, Texas 75202

**RE: Comments on Proposed Remedial Investigation Work Plan for  
Navajo Refinery, Artesia, New Mexico**

Dear Mr. Mayer:

This letter provides EPA with comments on the work plan prepared by Earth Technology Corporation for Navajo Refining Company.

Evaporation Ponds

The Oil Conservation Division has been sampling ground water at and in the vicinity of Navajo's wastewater ponds since 1985 as part of OCD's review of Navajo's proposed ground water discharge plan. These results are available to the public. OCD's sampling to date has been limited to existing water wells, monitor wells (some installed at OCD's request), the ponds and the river. The OCD would welcome additional investigation to better define the hydrologic and water quality relationships in the vicinity of the ponds.

Specifically, the investigation should include collection of information in the following areas:

1. Direction and rate of ground water movement in the vicinity of the ponds but away from the direct mounding effect of the ponds.
2. Impact of seasonal changes in river stage on the direction and movement of ground water.
3. Water quality characterization and geographical extent of the degraded water in the vicinity of MW-4 and MW-5. The water has a strong hydrocarbon odor but numerous OCD samples analyzed by several laboratories have been inconclusive with respect to constituents and concentrations. Particular attention should be given to characterizing ground water south and east of these wells.

Mr. Richard Mayer  
January 4, 1990  
Page -2-

4. Determination of the vertical variation in water quality in the vicinity of the ponds, both due to natural conditions (phreatophytes) and due to ponding of the wastewater. The variation due to natural conditions is important because the water quality in the upper ten feet of saturation may be adversely impacted and made saltier by evapotranspiration. This is a well known effect of plant growth in arid to semiarid regions.

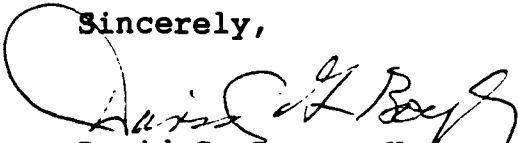
Sampling should include analyses for major cations and anions, and fluoride in addition to HSL volatile and semi-volatile organics and inorganics. This will allow better interpretation of the ground water chemistry.

#### Truck Bypass Landfarm

At the Truck Bypass Landfarm, consideration should be given to obtaining shallow core samples from sites randomly selected within the landfarm. The purpose of this sampling would be to determine depth of penetration of contaminants from the applied sludge.

I was glad to meet with you on December 21 to discuss these matters and I hope these comments can be incorporated in the final workplan. If you have any questions please contact me at (505) 827-5812.

Sincerely,



David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB/sl

cc: OCD Artesia Office  
David Griffin, Navajo Refining Company

TELEPHONE  
(505) 748-3311



NAVJOIL CONSERVATION DIVISION  
**REFINING COMPANY**

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278  
FAX  
(505) 746-6410

89 NOV 13 AM 11 17

November 6, 1989

Mr. David G. Boyer  
NM Oil Conservation Division  
Land Office Building  
P.O. Box 2088  
Santa Fe, NM 87501

Dear Mr. Boyer:

Enclosed are copies of a survey showing the monitor wells and piezometers in the area of the evaporation ponds. The attached table contains X, Y coordinates and a casing elevation for each of the P87, OCD and MW series wells of interest.

Groundwater elevations for each one of the points and the ponds were determined on October 25, 1989 and are tabulated below:

P87-1	NML	OCD-1	NM	MW-3	3299.02
-2	NML	-2	3300.33	-4	3298.84
-3	NML	-3	3299.92	-5	3298.28
-4	3297.28	-4	3399.54	-6	3299.30
-13	NML	-5	3299.43	-7	3298.18
-14	NML	-6	3298.70	Ponds	3309.35
-15	NML	-7	3300.67		
-16	NML	-8	3299.07		
-17	NML				
-19	NML				

NML = No Measurable Level (Dry)

NM = Not Measured

The wells and piezometers will be remeasured during late Spring, while the Pecos River is running at high gauge.

Should you have any questions concerning the data, contact me at (505) 748-3311.

Regards,

Zeke Sherman  
Environmental Engineer

ZRS/pb  
enclosure

<u>POINT</u>	<u>COORDINATE</u>		<u>ELEVATION (Top of Pipe)</u>
	NORTH	EAST	
BM INLET BOX			3311.50
NE COR. SEC. 12	10,000.00	10,000.00	
E $\frac{1}{2}$ COR. SEC. 12	7,346.48	10,000.77	
P87-1	7,860.98	7,066.33	3308.17
P87-2	7,877.45	8,050.46	3308.22
P87-3	6,860.52	6,039.77	3308.74
P87-4	6,906.30	7,069.94	3307.14
P87-13	9,017.22	10,083.78	3306.47
P87-14	8,013.55	10,105.91	3306.60
P87-15	7,874.05	8,882.25	3306.52
P87-16	9,081.67	9,081.67	3304.78
P87-17	6,980.05	10,043.43	3306.91
P87-19	6,891.51	8,077.86	3306.99
MW-3	8,853.34	7,059.28	3308.42
MW-4	8,492.40	7,086.25	3310.81
MW-5	8,662.74	8,302.43	3307.27
MW-6	8,836.92	6,389.77	3311.85
MW-7	8,865.34	9,272.82	3306.15
OCD-1	11,151.77	8,123.67	3312.68
OCD-2	11,446.35	8,713.04	3312.50
OCD-3	11,926.99	9,580.72	3312.77
OCD-4	12,510.53	10,450.08	3312.23
OCD-5	11,492.04	10,851.91	3310.08
OCD-6	10,949.30	10,096.57	3309.93
OCD-7	10,584.02	9,617.71	3309.25
OCD-8	9,386.15	9,933.91	3308.05

RECEIVED

## NEW MEXICO OIL CONSERVATION COMMISSION

## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

OCT 13 '89

NAME OF OPERATOR Navajo Refining Company					ADDRESS P.O. Box 159 Artesia, New Mexico			ARTESIA OFFICE	
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*			
TYPE OF FACILITY	DRUG WELL	PROD. WELL	TANK BTY	PIPE LINEX	GASO PLNT	OIL RFY	OTHER*		
NAME OF FACILITY Barber Gathering Pipeline									
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) SW1					SEC. 8	TWP. 20	RGE. 30	COUNTY Eddy	
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK 1 1/2 miles southwest of Eddy Potash Co.									
DATE AND HOUR OF OCCURENCE 10-11-89					DATE AND HOUR OF DISCOVERY 11:00 A.M. 10/11/89				
WAS IMMEDIATE NOTICE GIVEN?		YES	NO	NOT REQUIRED X	IF YES, TO WHOM				
BY WHOM					DATE AND HOUR				
TYPE OF FLUID LOST Crude Oil					QUANTITY OF LOSS 100		VOLUME RECOVERED 70		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO	QUANTITY 5-10 Bbls					
IF YES, DESCRIBE FULLY**									
Crude oil ran into tailings pond for Eddy Potash Co.									
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**									
4" pipeline leak, section of pipeline replaced.									
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**									
Sprayed oil on area 75 ft. by 100 ft., some oil ran into salt water pond behind potash mine. All oil recoverable was recovered. The rest of the oil area was covered with dirt. Straw was used to absorb oil on water, then burned.									
DESCRIPTION OF AREA		FARMING	GRAZING	URBAN	OTHER* Potash mine - salt lake				
SURFACE CONDITIONS		SANDY	SANDY LOAM	CLAY	ROCKY	WET X	DRY	SNOW	
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**									
Weather calm, dry and no wind.									
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF									
SIGNED		TITLE Cathodic Protection Supr DATE 10/13/89							

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

## OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Permit No. \_\_\_\_\_  
(For Division Use Only)

### APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952 FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule 711(I)

Operator Name: Navajo Refining Company

Operator Address: 501 East Main, P.O. Drawer 159

Lease or Facility Name Refinery Evaporation Ponds Location S $\frac{1}{2}$  Sec 1 & N $\frac{1}{2}$  Sec 12

Size of pit or tank: (Pond) approx. 100 ac (4,356,000 ft)

Ut.	Ltr.	Sec.	Twp.	Rge
T.17.S.		R.26.E.		

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

       The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.

The refinery operates a waste water treatment facility that removes

oil and grease from it's effluent.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:

Pond levels are inspected on a regular basis. Should any slicks accumulate, the oil and

grease would be skimmed and returned to the refinery by vacuum truck within two (2)  
working days.

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

       Operator proposes the following alternate protective measures: A floating absorbent boom will be  
placed so as to intercept and contain any potential slicks moving from effluent  
discharge point.

**CERTIFICATION BY OPERATOR:** I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature [Signature] Title Environmental Engineer Date 8-28-89

Printed Name Zeke Sherman Telephone No. (505) 748-3311

#### FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected \_\_\_\_\_

Inspected by \_\_\_\_\_

Approved by \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

**RECEIVED**

AUG 30 1989

OIL CONSERVATION DIV.  
SANTA FE

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

July 13, 1989

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT NO. P-106-675-164

Mr. Zeke Sherman  
Environmental Compliance Engineer  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: Discharge Plan for Navajo Refinery, GW-28

Dear Mr. Sherman:

This letter is to notify you of Oil Conservation Division's (OCD) upcoming sampling inspection of the Navajo Refinery and to require that you provide us with information previously requested.

My staff and I will arrive at the refinery office at 8 am, Tuesday, July 25th. During the visit we plan to inspect modifications made since the last inspection, and will perform ground water sampling on the MW and OCD series monitor wells, the wastewater ponds, the river and the final effluent stream. We expect to be on site at least three days performing these activities.

As you know, the question of off-site contamination (type, extent and direction of movement) yet has to be resolved. Along with the results of the ground water sampling, current information on water levels and ground water levels and ground water flow direction is needed. Use of the peizometers that were installed several years ago will provide the necessary information if they are stabilized and surveyed. In a letter to you dated March 8, 1988 (attached), Navajo was required to obtain this information, but it has not yet been provided to us. In addition, Plate 2 of the discharge plan needs updating to reflect all wells including the new OCD wells and the piezometers. Three copies of the revised plate are needed for our use.

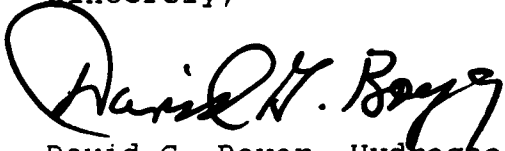
By August 31, 1989, provide OCD with the location and water level information required in this letter and the March 8, 1988 letter. After evaluation of that information and our July sampling results, we will schedule a meeting to discuss necessary actions regarding further investigation or remedial action in the pond area.



Mr. Zeke Sherman  
July 13, 1989  
Page -2-

If you have any questions, please contact me at 827-5812.

Sincerely,

A handwritten signature in black ink, appearing to read "David G. Boyer". The signature is written in a cursive style with a large, looping initial "D".

David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB/sl

Attachment

cc: OCD Artesia Office

June 89

BEFORE THE ADMINISTRATOR  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.

In the Matter of:

Navajo Refining Company

RCRA Permit No. NMD 048918817

RCRA Appeal No. 88-3

ORDER DENYING REVIEW

By petition submitted under 40 CFR §124.19, Navajo Refining Company seeks review of a RCRA permit issued by Region VI for Navajo's oil refinery in Artesia, New Mexico. The Petition challenges certain permit conditions that require corrective action under RCRA §3004(u) for a drainage ditch and three evaporation ponds. Navajo has used these units since the 1930s to manage wastewater from its refining operations. The ditch runs across land not owned by Navajo. With the owners' permission, Navajo has used the ditch to transport substantial amounts of wastewater and drainage on a daily basis from the rest of the facility to the evaporation ponds. The ponds cover about eighty acres and are located on property owned by Navajo about three miles from the rest of the refinery. Navajo argues that the ditch and ponds are not part of its "facility" and therefore not subject to corrective action under RCRA §3004(u), which by its terms applies only to releases from units "at a \* \* \* facility seeking a permit" under Subchapter III of RCRA. 42 U.S.C.A. §6924(u) (West Supp. 1988).

The word "facility" is not defined in RCRA. As one might expect with such a general term, its precise meaning is not uniform throughout the statute but instead depends upon the context in which it is used. See Mobile Oil Corp. v. EPA, 29 Env't. Rep. Cas. (BNA) 1385, 1387 (D.C. Cir. April 4, 1989). As used in Section 3004(u), "facility" encompasses the broadest possible extent of the Agency's area jurisdiction under Section 3004. See 50 Fed. Reg. 28,712 (July 15, 1985). As interpreted by the Agency, "facility" in RCRA §3004(u)

is not limited to those portions of the owner's property at which units for the management of solid or hazardous waste are located, but rather extends to all contiguous property under the owner or operator's control.

Id. (emphasis added); see also United Technologies Corp. v. EPA, 821 F.2d 714 (D.C. Cir. 1987) (upholding Agency's reading of "facility" as used in RCRA §3004(u)).

Applying this interpretation, Navajo argues that the ditch is outside of its control because it does not own the ditch and has no right to exclude others from using this property. It contends that the ponds are not contiguous to its refinery because they are three miles away and separated from it by land owned by others. The Region contends that Navajo controls the ditch because Navajo has used it to transport wastewater for more than fifty years. It views the ponds as contiguous to, and thus a part of, the facility because they are physically connected to the rest of the refinery by the ditch.

It is beyond cavil that the ditch is contiguous to the rest of the refinery, that the ponds are contiguous to the ditch, and that Navajo owns and controls the ponds. The issue reduces to whether Navajo exercises sufficient control over the ditch; if so, then the ditch and the adjoining ponds are contiguous land under its control and thus part of its "facility" under RCRA §3004(u).

Application of the contiguity and control criteria to define the scope of a facility under RCRA §3004(u) should be guided by the meaning of the word "facility" itself, which the criteria merely serve to explicate. "Facility" is an expansive term which generally denotes anything built, installed, or established to serve a particular purpose.<sup>1/</sup> Region VI found adequate control here by focusing on Navajo's longstanding ability to use the ditch as part of its overall refining operations, specifically, to transport the refinery's wastewater to its evaporation ponds. This functional and temporal application of the control criterion is entirely consistent with the meaning of "facility." Navajo's use and control of the ditch is integrally related to the overall purpose of its refinery, and it does no violence to the statutory language to consider the ditch (and adjoining ponds) part of that facility for purposes of RCRA §3004(u). Indeed, the record shows

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<sup>1/</sup> See Webster's Ninth New Collegiate Dictionary, at 444 (1986) (definition 4b of "facility"); Black's Law Dictionary, at 531 (1979); cf. Chevron, U.S.A., Inc. v. NRDC, 467 U.S. 837, 860 (1984) ("The ordinary meaning of the term 'facility' is some collection of integrated elements which has been designed and constructed to achieve some purpose.")

that Navajo itself has described the ponds as units "at [its] facility." <sup>2/</sup>

Navajo does not assert, and the record before me fails to show, that Navajo's lack of legal title to the ditch will impede its efforts to remediate any releases caused by its use of the ditch. Given the narrowness of the ditch, it might become necessary to undertake corrective action beyond the precise boundaries of the facility (i.e. the ditch, the ponds, and the rest of the refinery) if on-site action is inadequate to protect human health and the environment. RCRA §3004(v) authorizes such off-site action unless Navajo, despite its best efforts, is unable to obtain the necessary permission to undertake such action. See 42 U.S.C.A. §6924(v). Requiring Navajo to address any release from the ditch, however, is no different from requiring corrective action by other non-owner operators, the propriety of which is undisputed.

If, on the other hand, the scope of a "facility" were coterminous with the right to exclude (as Navajo contends), a permittee could easily circumvent RCRA §3004(u) by deliberately arranging to manage its solid waste on contiguous land owned and shared by others. This reading would undermine the broad

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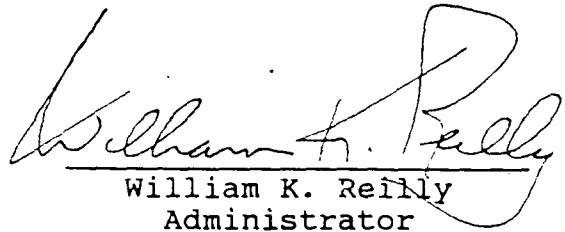
<sup>2/</sup> Response to Early Enactment Provisions of the Hazardous and Solid Waste Amendments of 1984, at Attachment 2 ("Information Regarding Potential Releases from Solid Waste Management Units"), Questions 1 & 2 and responses (Attachment 18 to Region VI's July 15, 1988 Response to Navajo's Petition); see also Letter from Navajo to Region VI, item 2 (March 27, 1986) (Attachment 9 to Region VI's Response to Navajo's Petition) (describing ditch and ponds as "units at the refinery").

remedial purpose of RCRA §3004(u), is inconsistent with the expansive meaning of "facility," and is therefore rejected. <sup>3/</sup>

Conclusion

For the reasons set forth above and based on the record before me, Navajo's petition for review is denied.

So ordered.

  
William K. Reilly  
Administrator

Dated: JUN 27 1989

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<sup>3/</sup> Navajo further argues that application of RCRA §3004(u) to the ditch and ponds is "regulatorily redundant" because this land is already regulated by the New Mexico Oil Conservation Division. Petition at 3-4. As Region VI has stated, however, inclusion of this property in the facility permit is necessary to ensure that corrective action for these units is consistent with the demands of RCRA §3004(u). See Response to Comments at 2, Response 5 (attached to Navajo's Petition).

Navajo's Petition raises two other issues, but these have been resolved by the parties through settlement negotiations.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Order Denying Review in the matter of Navajo Refining Company, RCRA Appeal No. 88-3, were sent to the following in the manner indicated:


By First Class Mail,  
Postage Prepaid:

Robert E. Morse, III  
CRAIN, CATON, & JAMES  
Attorneys and Counselors  
3300 Two Houston Center  
Houston, Texas 77010-1079

Renee Holmes  
Office of Regional Counsel  
U.S. EPA, Region VI  
1445 Ross Avenue  
Dallas, TX 75202

Allyn M. Davis, Director  
Hazardous Waste Management  
Division  
U.S. EPA, Region VI  
1445 Ross Avenue  
Dallas, TX 75202

Dated: JUN 28 1989

  
Brenda H. Selden, Secretary  
to the Chief Judicial Officer

File Copy (5)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

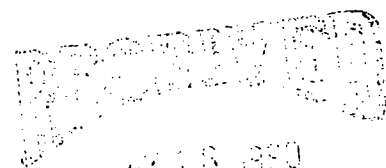
1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

May 16, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

David G. Griffin  
Superintendent of Environmental  
Affairs and Quality Control  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210



NAVAJO REFINING CO.

RE: RFI Workplan - Navajo Refining Co. - NMD048918817

Dear Mr. Griffin:

We have completed the technical review of the document entitled "Remedial Investigation Work Plan for Navajo Refining Company Facility in Artesia, New Mexico." This letter approves this plan with revisions, which are detailed in the enclosure to this letter. Therefore, the approved RCRA Facility Investigation (RFI) Workplan consists of the above referenced document and the enclosed revisions.

The submittal as reviewed is considered to be an initial Phase I of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Workplan. The Phase I RFI report as detailed in the Workplan shall be due 135 days from receipt of this letter.

This report must detail the findings of the Phase I RFI, and include the Workplans for a Phase II RFI for the Three Mile Ditch and Evaporation Ponds (Nos. 1, 2 and 3). This Phase II Workplan is needed to completely define the nature, extent, magnitude and rate of migration of any contaminants from each solid waste unit. This Workplan must address each item under RFI Task III: Facility Investigation, and specify a timeframe for completion of RFI activities. The Workplan must also include a timeframe for the draft RFI report (Task VI.C.), which includes the Investigation Analysis (Task IV). In addition, the Environmental Protection Agency will review the results of the RFI Phase I and may require a Phase II investigation for the Truck Bypass Landfarm. Submission of grossly deficient RFI Workplans and Reports may subject the Permittee to enforcement action under Section 3008 of RCRA. The submission of five copies, as specified under Task VII.C., is not necessary. Submission of three (3) paper copies and one computer disk copy will suffice.

You shall immediately initiate the implementation of this approved RFI Workplan with the enclosed revisions, according to the schedule contained in the Workplan.



- 2 -

If you have any questions, please contact me or have your staff contact Rich Mayer of my staff at (214) 655-6775.

Sincerely yours,

*for Jack Davis*

Allyn M. Davis  
Director  
Hazardous Waste Management Division

Enclosure

cc: Elizabeth Gordon, Environmental Supervisor  
Environmental Improvement Division

## REVISIONS TO THE NAVAJO RFI WORKPLAN

Below are the revisions which EPA has made to the Navajo RFI Workplan, dated November 1989. EPA has replaced the air monitoring requirements for the Truck Bypass Landfarm with soil coring requirements.

Page 3-4 of the RFI Workplan; Added an additional subsection on soil sampling of the Truck Bypass Landfarm (3.1.1.2.3.):

- ✓ 1. Navajo shall take a minimum of three (3) background soil core samples (Navajo can take more if desired). These background soil core samples shall be taken in the same soil type (Soil Conservation Service Soil Series Classification) and shall be in an area unaffected by past waste management activities or contamination.
- ✓ 2. Navajo shall take a minimum of nine (9) soil core samples within the boundary of the Truck Bypass Landfarm. Locations of each soil core shall be randomly selected and shall follow procedures in the Permit Guidance Manual on Unsaturated Zone Monitoring for Hazardous Waste Land Treatment Units, May 1986.
- ✓ 3. Five of the soil cores shall be sampled at the following intervals (measured from the present soil surface): 0-1', 3-4', 5-5 1/2', 6-7', and 8-9'. The remaining four soil cores shall be sampled in the above mentioned intervals, except for the 3-4' interval. Each sampling interval shall be analyzed for those constituents indicated in Table 3-6, including oil and grease. The background soil samples need to be analyzed only for metals and oil and grease. Samples shall not be composited prior to analysis.
- ✓ 4. All soil cores taken shall follow Navajo RFI Workplan Sections 3.2.2.2., Borehole Logs and 3.2.3., Sample Collection. In addition, Navajo shall identify all soil zones/horizons which are visually contaminated or are vapor analysis detected (using a OVA or PID instrument).
- ✓ 5. Navajo shall use the analysis of variance (ANOVA) statistical procedure for soil corings required for the Truck Bypass Landfarm. If data from the soil borings does not conform to procedures required by ANOVA, then a different statistical procedure may be used, providing the justification to EPA in the RFI Report.
- ✓ Page 3-4 of the RFI Workplan; third paragraph, first sentence of paragraph revised to read: "Ground water samples shall be obtained from monitor wells 43, 29, 39, 40, 41, and 42."
- ✓ Page 3-9 of the RFI Workplan, added an additional subsection on Groundwater Investigation of the Three Mile Ditch (3.1.3.2.5, Groundwater Investigation):

Groundwater samples shall be obtained from monitoring wells 30, 45, 46, 47 and 48. Each sample shall be analyzed for the hazardous

substance list (HSL) volatile and semi-volatile organics, inorganics (see Table 3.6.), sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate, fluoride, and for total dissolved solids (TDS). Additionally, field measurements of pH, temperature and specific conductance shall be performed. Sampling and field measurement procedures are detailed in Section 3.2.1.

Static water level measurements shall be obtained from the existing shallow wells in the vicinity of the Three Mile Ditch. The measurements shall be obtained with an electric tape prior to sampling. The data shall be utilized to determine the direction of groundwater flow in the vicinity of the ditch. Procedures for obtaining static water levels are included in Section 3.2.1.1.

Navajo shall install one (1) background monitoring well in a zone representative of the saturated zone of monitoring wells 30, 45, and 46. This well shall be located hydraulically upgradient and shall represent groundwater unaffected by waste activities or contamination. Well installation, sampling/analysis procedures shall follow section 3.2 (and all other applicable sections) of the RFI Workplan.

The newly-installed upgradient well (background) shall be sampled and analyzed for the same constituents and parameters as wells 30, 45, 46, 47 and 48.

**Page 3-8 of the RFI Workplan; the paragraphs below replace what is included in Section 3.1.3.2.2, Subsurface Sampling:**

Soil sampling intervals shall be taken from the Three-Mile Ditch based on the following criteria:

1. Samples shall be collected from each of the different soil types encountered from the origination of the Ditch at the refinery to the outfall of the Ditch at the Evaporation Ponds. Based on U.S. Department of Agriculture Soil Conservation Service Report, Eddy Area, New Mexico - Sheet #6 and 7, 1968. The Ditch traverses five (5) different soil types. These five soil types are: Pima silt and clay loam, Karro loam, Reeves loam, Arno silty clay loam, and Arno - Harky complex. Within any one soil type sampling distance shall not exceed 1500 feet.
2. Samples shall be collected within these soil types, based on changes in declination of the ditch (i.e. places along the Ditch's "run" which would, because of less declination, create a greater potential for infiltration, or because of a rapid change in declination of the ditch would create a "pool", also increasing the potential for infiltration).

Samples shall be collected from the side walls of a trench created by a backhoe. Trenching will be performed in a "cross-ditch" configuration (T configuration), with material exposed perpendicular and parallel to original ditch flow. This method is preferred because:

1. Health and Safety constraints (overhead power lines) of collecting samples along the first 1.5 miles of the Ditch using a coring devise (drill rig).
2. This method shall minimize the sampling error of collection of soils which have been wind-blown or placed into the Ditch. The trench shall be visually inspected to determine the "original" Ditch surface.

Within each trench, samples shall be collected to determine the vertical migration of the constituents in the ditch. The trenching at all locations shall be completed (excavated) in such a manner to expose the soils which are visually contaminated and a minimum of 3 feet below the visual contamination (unless ground water is encountered, at which point excavation will cease). Samples shall be collected at:

1. the original ditch surface,
2. a mid-point within the visually contaminated horizon,
3. the interface of the visually contaminated soil, and visually clean soil, and,
4. three (3) feet below the visually contaminated soil.

All samples shall be collected horizontally into the trench face and shall be collected in a manner which minimizes the release/escape of any volatile constituents in the soil sample. Navajo shall also, identify all soil zones/horizons which are visually contaminated or are vapor analysis detected (using a OVA or PID instrument). Navajo shall also include in the RFI Report a cross-section and videotape (narrated) of each trench. Samples collected from trenches shall be analyzed for the hazardous substance list (HSL) volatile and semi-volatile organics, oil and grease, and inorganic metals.

Samples shall not be composited. All samples collected shall follow Navajo RFI Workplan Sections 3.2.2.2., Borehole logs (Modified to a trench log) and 3.2.3., Sample Collection.

A minimum of five (5) background soil samples (unaffected by waste management) shall be taken in the same soil type(s) that occur along the length of the Three-Mile Ditch (Soil Conservation Service Soil Series Classification). The Intervals to be collected shall be the same intervals as those of the active (ditch samples). Background soil samples need to be analyzed for metals and oil and grease.

Navajo shall use the analysis of variance (ANOVA) statistical procedure for soil trench samples. If data from the soil samples do not conform to procedures required by ANOVA, then a different statistical procedure may be used, providing the justification to EPA in the RFI Report.

Page 3-6 of the RFI Workplan, the paragraphs below have been added to Section 3.1.2.2.1., Groundwater Investigations.

Navajo shall install one (1) background monitoring well in a zone representative of the saturated zones of monitoring wells MW-1 through MW-9 and OCD1 through OCD8. This well shall be located hydraulically upgradient and shall represent groundwater unaffected by waste activities or contamination. Well installation, sampling/analysis procedures shall follow section 3.2 (and all other applicable sections) of the Workplan.

The newly-installed upgradient well (background) shall be sampled and analyzed for the same constituents and parameters as wells MW-1 through MW-9 and OCD1 through OCD8. Groundwater samples shall be obtained from the windmill south of evaporation pond No. 1. Each sample shall be analyzed for the hazardous substance list (HSL) volatile and semi-volatile organics, inorganics (see Table 3.6), sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate, fluoride, and for total dissolved solids (TDS). Additionally, field measurements of pH, temperature and specific conductance shall be performed. Sampling and field measurement procedures are detailed in Section 3.2.1.

Page 3-23 of the RFI Workplan; Added on additional Subsection on Backhole Trench Excavation and Sampling (3.2.3.6).

Backhoe sampling in waste areas is preferentially used where drilling rig access may be difficult. Backhoe sampling is rapid, allows wide sample selection, reveals waste and soil layering.

Excavation shall proceed by removing the topsoil or cover and preceeding to dig in approximately 0.5 to 1.0 foot deep cuts using a scooping motion. The initial excavation will be about 8 feet long and 3-4 feet wide. As the excavation proceeds, the topsoil or cover is placed in one pile and the waste, when uncovered, is placed in a separate pile. All excavated materials shall be placed on 4 ml plastic sheeting to prevent the spread of contamination. Efforts shall be made to deposit materials in order of excavation. During excavation, visual observation of the pit shall be made for soil color changes, layering, and former bottom layers containing brush, grass and trash.

A detailed description of these samples shall be recorded. Sample data will include the following information, as a minimum; soil consistency, color and general appearance, free liquid accumulation, organic films or sheens, and vapor analysis (using a OVA or PID instrument).

The depth of the trench shall be measured using a drop tape or similar method.

The excavation shall be refilled in reverse order of removal. That is, the last materials excavated shall be placed first into the trench so that the original topsoil layer covers the finished trench excavation. All loose soil around the excavation will be placed in the trench. The excavation shall be refilled and compacted with a backhoe or front end loader.

The backhoe bucket shall be decontaminated before trenching is continued at a new sampling location. Decontamination shall consist of a steam or high-pressure water wash. The resultant rinsate may be discharged to the surface.



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

February 15, 1989

Mr. Zeke Sherman  
Navajo Refining Company  
501 E. Main Street  
P. O. Drawer 159  
Artesia, New Mexico 88210

**RE: Discharge Plan GW-28  
Navajo Refinery  
Eddy County, New Mexico**

Dear Mr. Sherman:

The Oil Conservation Division (OCD) has received your letter dated January 24, 1989, containing the plans and specifications for the spill containment at the truck loading rack and the salt filters at the North Plan API separator.

A review of the plans and specifications submitted found them to be adequate for the protection of ground water and are approved for construction. Notify this office when construction is completed.

Please advised that this approval does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

If you have any questions, please do not hesitate to call me at (505) 827-5884.

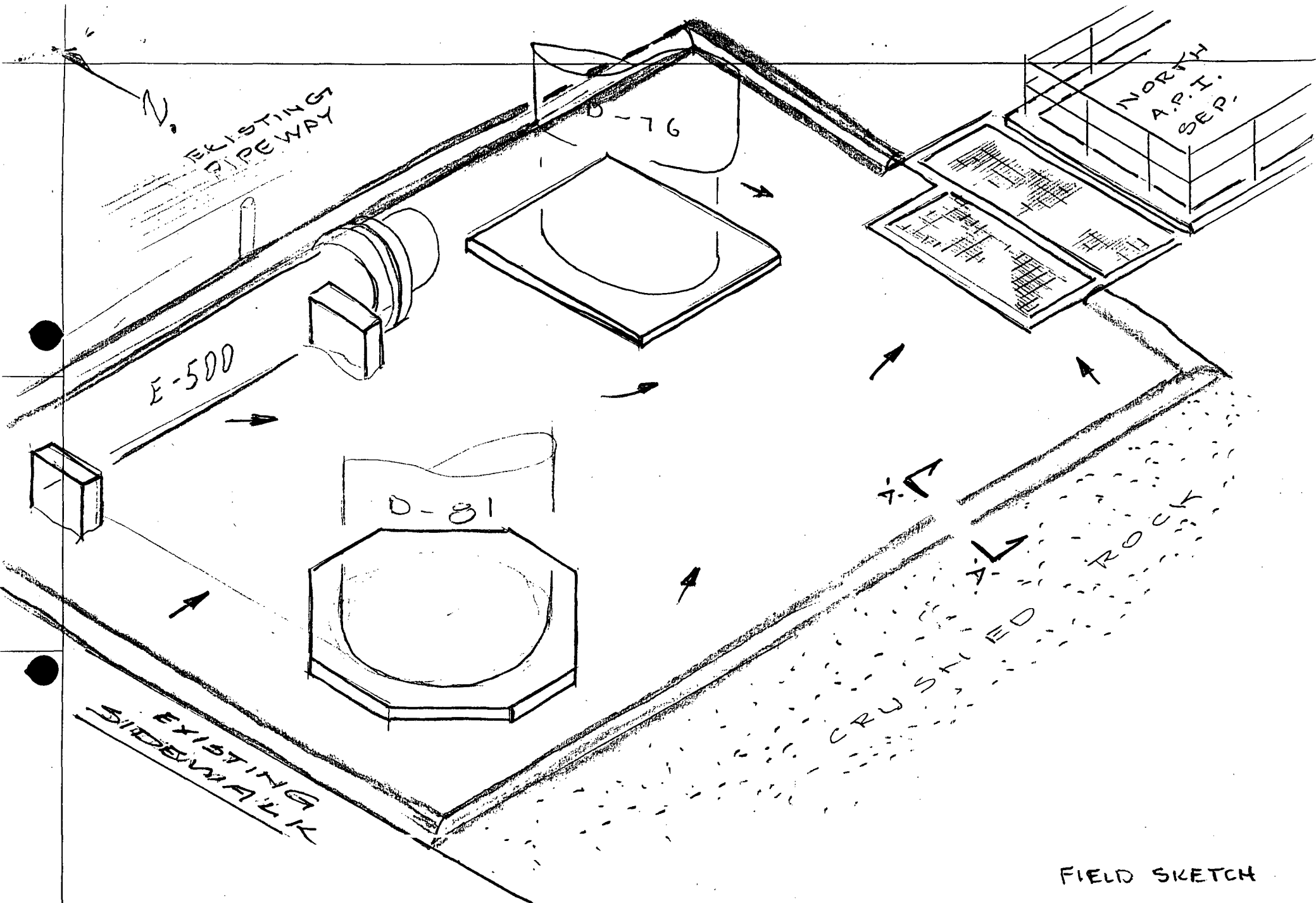
Sincerely,

A handwritten signature in cursive script that reads "Roger C. Anderson".

Roger C. Anderson  
Environmental Engineer

RCA/sl

cc: OCD Hobbs Office



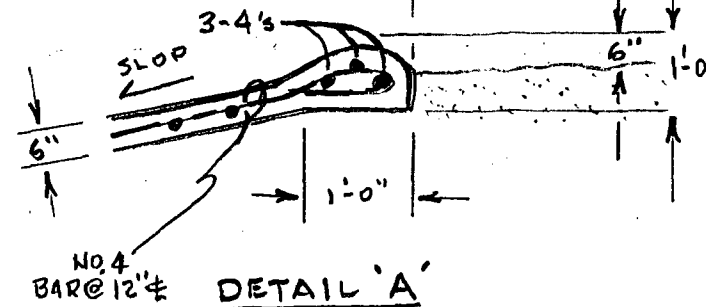
FIELD SKETCH

N.R. LEWIS  
1/12/89



N.

INSIDE OUTSIDE



EXISTING  
PIPE WAY

E-500

D-76

5 FT. X 45 FT. X 25 FT. = 25 yds<sup>3</sup>  
EXISTING STRUCT = 3.5 yds<sup>3</sup>  
TOTAL CONC. = 21.5 yds<sup>3</sup>

\$4500.00

D-81

NORTH  
PLANT  
A.P. I.

SPILL CONTAINMENT  
SKETCH  
SALT FILTER

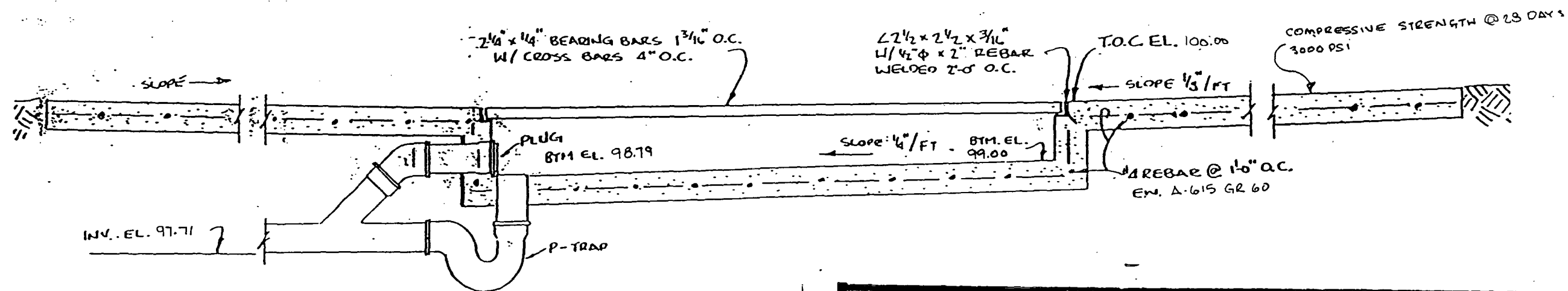
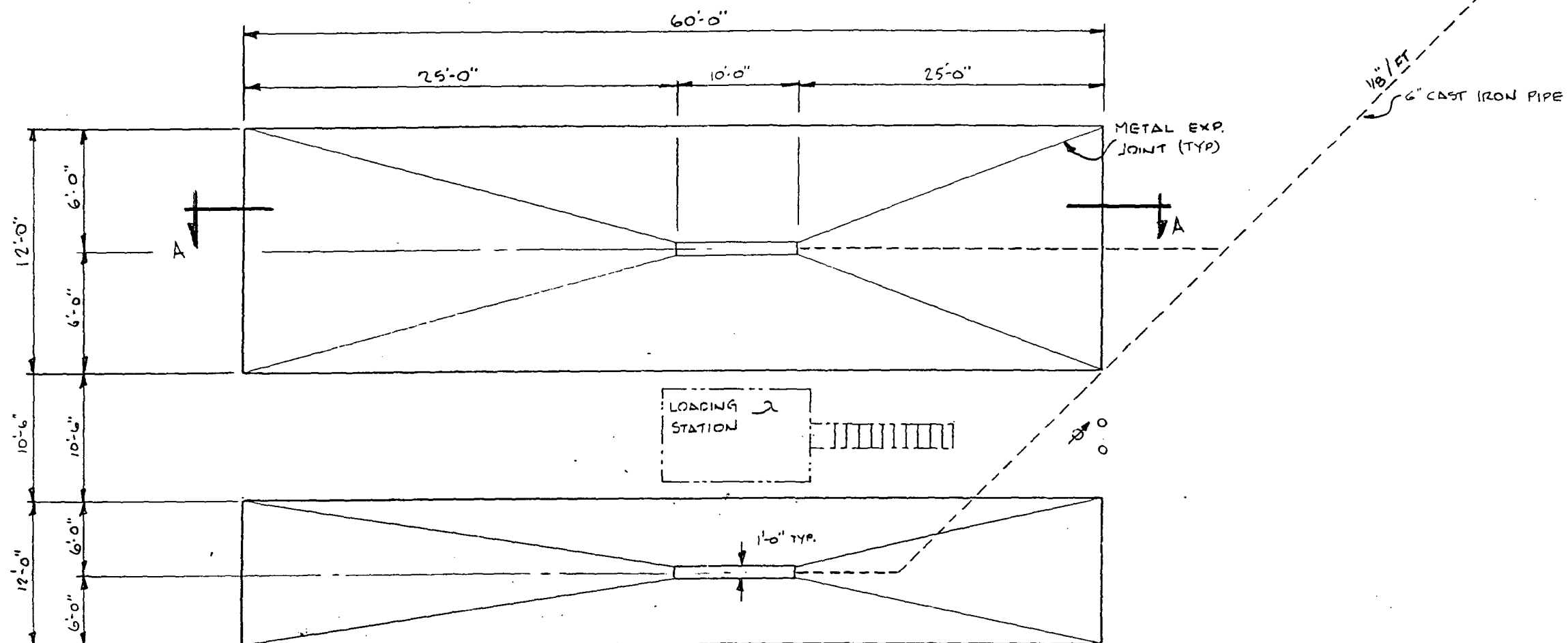
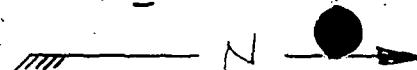
1-12-89  
NO SCALE

SIDEWALK

42-381 50 SHEETS 5 SQUARE  
42-382 100 SHEETS 5 SQUARE  
42-383 200 SHEETS 5 SQUARE



N. D. L. 11/15



SECTION "A - A"

BY: GLS

DATE:

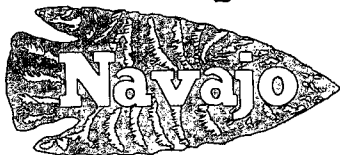
CBO LOADING STATION



REFINING COMPANY

ENGINEERING DEPARTMENT  
ARTESIA, NEW MEXICO

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

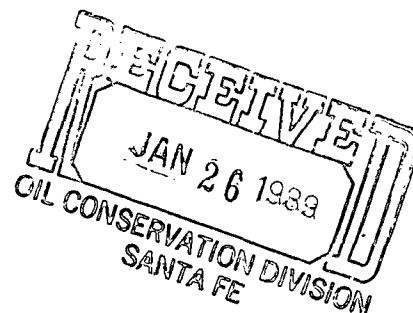
501 EAST MAIN STREET ○ P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

January 24, 1988

1989 *QRB*

Mr. David G. Boyer  
NM Oil Conservation Division  
Land Office Building  
P.O. Box 2088  
Santa Fe, NM 87501



RE: NAVAJO CORRESPONDENCE, DECEMBER 23, 1988  
NAVAJO REFINERY DISCHARGE PLAN, GW-28

Dear Mr. Boyer:

I have enclosed copies of plans and specifications for spill containment at our CBO truck loading rack, and the salt filters at the North Plant API separator for your consideration. We expect construction to commence on both projects during the month of June 1989, with completion by the end of July 1989, or possibly sooner.

On January 19, 1989 we commenced construction of the additional evaporation pond and reinforcement of the existing dikes to protect against flood stage. Construction should take approximately three to four weeks.

Should you have any questions, do not hesitate to contact me at (505) 748-3311, extension 281.

Regards,

Zeke Sherman  
Environmental Engineer

ZRS/pb  
enclosure



## REFINING COMPANY

501 EAST MAIN STREET ○ P. O. DRAWER 159

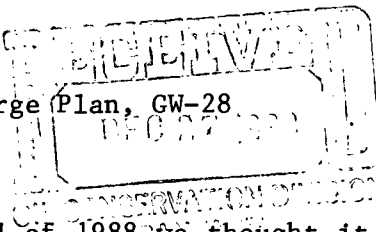
ARTESIA, NEW MEXICO 88210

December 23, 1988

Mr. David G. Boyer, Hydrogeologist  
Oil Conservation Division  
P.O. Box 2088  
Land Office Building  
Santa Fe, New Mexico 87501

Re: Navajo Refining Discharge Plan, GW-28

Dear Mr. Boyer:



As we approach the end of 1988 we thought it would be appropriate to briefly recap the completion during this year of various commitments made to your division at our February 1988 meeting on our discharge permit and to also describe our current situation on slop oil tankage (tank 130, 132, 133 and 135) and how such effects our commitments in this area.

1. During 1988 our SPCC plan was revised, updated and submitted to your office. Currently, we are completing a project whereby deficient dikes were increased and drain pipes added.
2. An inventory of active liquid hydrocarbon underground lines was submitted, as well as, procedures and testing schedule for such lines.
3. Tank 122 was dismantled and removed and apparent seam leaks on tanks 133 and 135 were inspected and, where needed, were repaired.
4. The railroad loading tank, D-105 filter tank, was removed and the area policed.
5. The boiler blowdown was diverted from the South Plant firewater pond and fresh water make up continues to improve the water quality. Testing of the water quality will again be performed in January 1989 and if such has not reached our desired goal, the water will be drained to our firefighting facility and made up with fresh water.
6. Railroad tracks have been removed from the South Plant, graded to improve drainage and as built plans submitted to your office.
7. Requested data on our asphalt storage pit were submitted.
8. We have submitted plans and recently received approval from the State Engineer's office for our evaporation pond expansion. Bids for this project will be sent to contractors in early January 1989. Work will proceed expeditiously, subject to weather conditions.

*An Independent Refinery Serving... NEW MEXICO ○ ARIZONA ○ WEST TEXAS*

Navajo has strived to improve its maintenance efforts in detecting and repairing oil drips and leaks at tanks, pumps or any discharge points and generally improving any deficiencies detected.

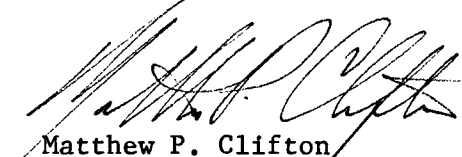
Recently we have obtained Board of Directors approval for additional slop oil tankage and as a result we are currently evaluating how the addition of such tankage could effect the future use of Tanks 130, 132, 133 and 135. Because of this, we felt it prudent to not submit definitive plans for catchment and drainage improvements for these tanks. We are hereby requesting that such plans not be required until June 30, 1989 in order to properly evaluate our options in this area. Particular maintenance attention will be given to these tanks during this interim period.

Plans and specification for our CBO loading rack and salt filter vessel containment project will be submitted by January 31, 1989.

We, at Navajo, are proud of our accomplishments during the last twelve months in improving our facility and we are dedicated to continue these efforts in the forthcoming years.

We hope you and all you personnel have a happy holiday season and, as always, your cooperation is deeply appreciated.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Matthew P. Clifton', is written over a horizontal line.

Matthew P. Clifton  
Mgr. of Economics & Engineering

MPC/sgp



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

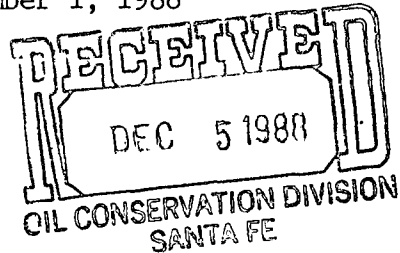
SANTA FE

December 1, 1988

S. E. REYNOLDS  
STATE ENGINEER

BATAAN MEMORIAL BUILDING  
STATE CAPITOL  
SANTA FE, NEW MEXICO 87503

Mr. Neal R. Lewis  
Engineering Construction Supt.  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210



Dear Mr. Lewis:

Reference is made to your November 16, 1988, letter recommending Mr. Bill G. McFarland, P.E., as the engineer in charge of construction of the Navajo Refining Company Evaporation Ponds 6, 7 and 8. We have reviewed Mr. McFarland's qualifications and find them acceptable subject to the following conditions:

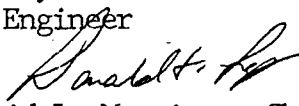
1. Mr. McFarland shall submit a progress report to the State Engineer by the 10th day of each month.
2. Construction shall be in accordance with approved plans and specifications. Any modification of the approved plans and specifications or design changes must be approved in writing by the State Engineer prior to undertaking such modifications.
3. Upon completion of the construction, Mr. McFarland shall submit to the State Engineer:
  - a. A completion report which shall include a description of problems encountered and their solution, summary of materials test data and construction photographs;
  - b. As-built drawings; and
  - c. A certificate that the dam as construction is safe for its intended use.

Please let me know if further discussion would be helpful.

Sincerely,

S. E. Reynolds  
State Engineer

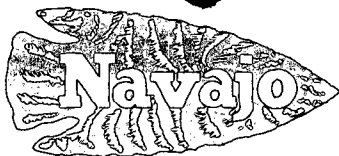
By:

  
Eluid L. Martinez, Chief  
Technical Division

ELM:kb

cc: D.N. Stone, Water Rights Division  
David Boyer, Energy & Minerals Dept.

TELEPHONE  
(505) 748-3311



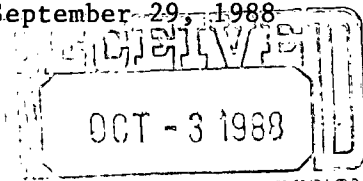
## REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

September 29, 1988



Mr. David G. Boyer  
NM Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

Dear Mr. Boyer:

This is an update on our efforts to fulfill the commitments for the Discharge Plan as outlined at the February 11, 1988 meeting between Navajo and the OCD.

Enclosed are drawings of the South Division R/R spur. They show the existing drainage and guttering after the spur removal.

The CBO area has been policed and plans are being prepared for modifications of the loading area to contain leaks or spills.

Boiler blow down water has been diverted from the "Old Fire Water Pond", and fresh water has been added to make up for evaporational losses.

These three items have all been completed before October 1, 1988 in accordance with the schedule set forth at the above mentioned meeting.

There has been some progress in purchasing the property south of the evaporation ponds. We hope to be able to report the success of our negotiations in the near future.

Should you have any questions please contact me at (505) 748-3311, extension 281.

Sincerely,

Zeke Sherman  
Environmental Engineer

ZRS/pb  
enclosure

# MEMORANDUM

July 27, 1988

State Engineer Office  
Santa Fe, New Mexico

TO Donald T. Lopez, P.E., Chief, Design & Construction Section

FROM Paul Saavedra, Water Resource Engineer

SUBJECT Review of Plans and Specifications for Navajo Refining Company  
Evaporation Ponds 6, 7 and 8 - File No. 4295

The writer has reviewed the subject plans and specifications. The ponds are designed to evaporate refinery effluent from the Navajo Refinery at Artesia, New Mexico. The subject dam is a perimeter dam approximately 8 feet in height around three ponds, ponds 6, 7 and 8. Interior dikes also 8 feet in height separate the 3 ponds. The hazard classification is low with a total combined storage capacity of 275 acre-feet at the normal water elevation.

There is no natural inflow to the ponds. The drainage area is the surface area (51 acres at the normal water line) of the ponds which is fed by a pipeline from the refinery. The 3 foot freeboard from the maximum water level to the top of the dam appears to be much greater than the 100-year storm. The dam has no spillway or outlet works.

It should be noted that the entire area of the proposed dams appear to be within the 100-year floodplain of the Pecos River. On July 25, 1988, Mr. Lopez spoke to Mr. David Boyer of the N.M. Oil Conservation Division (OCD). He stated that OCD administers the water quality regulations for the Navajo Refinery and that OCD is reviewing the adequacy of the construction of the ponds. He stated that OCD would require the exterior pond embankments be capable of withstanding a 100 yr. flood in the Pecos River. Attached is a copy of the Flood Hazard Boundary Map dated February 7, 1978 (National Flood

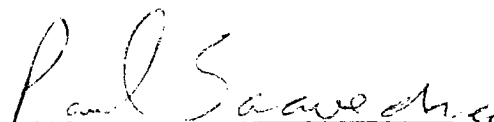


Insurance Program) for the area, the shaded area indicates the 100-year floodplain. It should be noted that inundation of the evaporation ponds by a flood in the Pecos River could result in discharge of the pond liquid into the Pecos River.

It is recommended the Navajo Refining Company's Evaporation Ponds 6, 7 and 8 be accepted for filing subject to the following conditions:

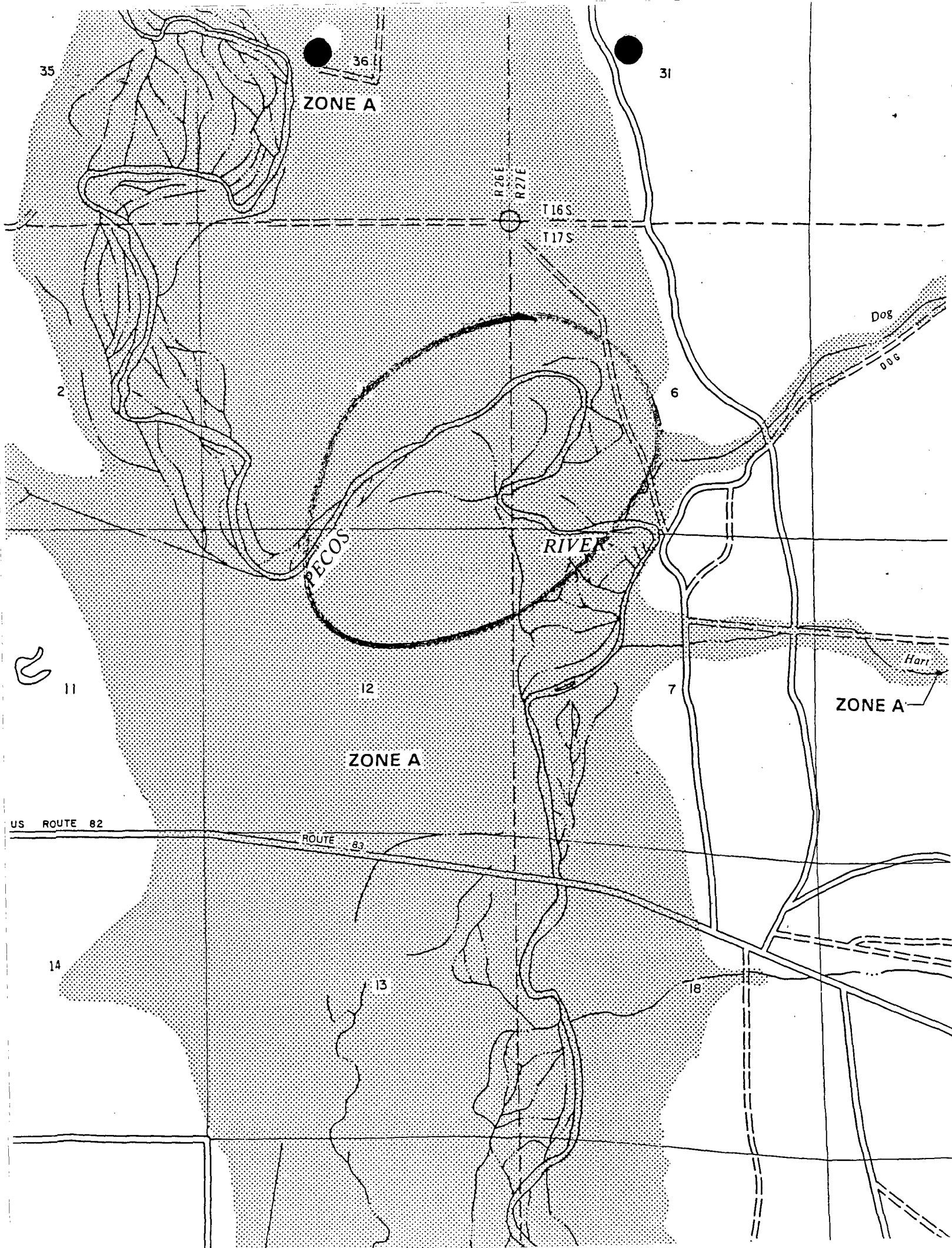
1. The qualifications of a professional engineer registered in New Mexico who will supervise construction must be approved by the State Engineer prior to undertaking construction.
2. The professional engineer supervising construction shall submit a progress report to the State Engineer by the 10th day of each month.
3. Construction shall be in accordance with approved plans and specifications. Any modification of the approved plans and specifications or design changes must be approved in writing by the State Engineer prior to undertaking such modifications.
4. Upon completion of the construction, the professional engineer shall submit to the State Engineer:
  1. A completion report which shall include a description of problems encountered and their solution, summary of materials test data and construction photographs;
  2. As-built drawings; and
  3. A certificate that the dam as constructed is safe for its intended use.

5. This approval, is of course, subject to all other applicable laws and regulations.

  
Paul Saavedra, P.E.

PS:kb

cc: D.N. Stone  
David Boyer, OCD



STATE ENGINEER OFFICE

ENGINEERING REVIEW  
PROJECT CHECK LIST

Revised January 9, 1984

I. General, Plans and Specifications

Applicant: Navajo Refining Company Evaporation

File # 4295

Ponds 6, 7 & 8				
Requirement		Yes	No	Not applicable
1.	Filing sheet (original drawings or mylar reproductions) Size, 36" x 24" .....	X		
2.	Plans (original drawings or mylar reproductions) Size, 36" by 24" .....	X		
3.	One-inch margin on all sides of drawings .....	X		
4.	Sheets numbered in sequence .....	X		
5.	Filing sheet separate from detail sheets .....	X		
6.	Carefully and neatly prepared with waterproof India ink .....	X		
7.	All signatures in waterproof black ink .....	X		
8.	Rolled instead of folded .....	X		
9.	Standard engineer's scale of sufficient size .....	X		
10.	Distances and dimensions shown in feet and decimals thereof or metric equivalent .....	X		
11.	Platted to true meridian .....	X		
12.	Area location map included .....	X		
13.	Map title and statements shown on the filing sheet .....	X		
14.	Engineer's stamp or seal impressed on filing sheet .....	X		
15.	Engineer's certificate of registration and preparation on filing sheet .....	X		
16.	Claimant's certificate (special for corporations) on filing sheet .....	X		
17.	Notary Public's signature and seal or stamp impressed on filing sheet in acknowledgement to claimant's certificate .....	X		
18.	Certificate form for State Engineer's acceptance on filing sheet .....	X		
19.	Specifications included .....	1		
20.	Engineer's certification of registration and preparation on specifications .....	1		
21.	Engineer's stamp or seal impressed on specifications .....	1		
22.	Certificate form for State Engineer's acceptance on specifications .....	1		
23.	Statement in specifications recognizing the authority of the State Engineer regarding inspection during construction and full power to act if specifications are not met .....	X		
24.	Cost estimate .....	X		
25.	Filing fees .....	X		

Note: Stock-water reservoirs in excess of 10 acre-feet shall comply with State Engineer Order Number 68 dated March 10, 1957.

Date

July 25, 1988

Signature

Paul S. Sweeney

STATE ENGINEER OFFICE  
ENGINEERING REVIEW  
PROJECT CHECK LIST  
Revised January 9, 1984

II. Dam and Appurtenances

Applicant: Navajo Refining Company Evaporation

File # 4295

Ponds 6, 7 & 8

Requirement	Yes	No	Not applicable
1. Map of drainage area .....	7		
2. Hazard classification (criteria in SCS TR-60 acceptable).....	X		
3. Average annual yield of drainage area in acre-feet 1/.....	7		
4. Topography of proposed reservoir 2/ .....	X		
5. Area-capacity table or curve for the reservoir to the dam crest	8		
6. Detailed dam site topography .....	X		
7. Dam site profile along centerline showing foundation materials geology and construction features .....	9		
8. Maximum dam section and dam section along outlet works .....			X
9. Upstream slope not steeper than 2-3/4 to 1 (below spillway) 3/			10
10. Downstream slope not steeper than 2 to 1 3/ .....	X		
11. Minimum crest width = $2(h)^{2/3} + 3'$ (minimum 8') 3/ .....	X		
12. Freeboard above maximum high water elevation, minimum 5 feet 4/			X
13. Riprap and bedding gravel on face of dam 5/ .....			X
14. Analyses of construction materials submitted .....	9		
15. Foundation investigation 6/ .....	9		
16. Cutoff trench provided .....	X		
17. Outlet works design (complete with hydraulic properties); minimum 18" pipe .....			X
18. Flood detention dams shall be ungated and the principal spillway (or outlet) of flood detention dams should be designed to empty the flood pool within 96 hours and to empty the sediment pool at the maximum practicable rate .....			X
19. Make and type of gates .....			X
20. Detailed spillway topography .....			X
21. Spillway design hydrograph (criteria set forth in SCS TR-60 )			
22. Freeboard design hydrograph (are acceptable for items 21 & 22)	7		
23. Spillway design hydraulics and capacity .....			X
24. Normal and maximum water surface elevation .....	X		
25. Outlet works tied to public survey corner or state coordinates	X		
26. Permanent bench mark established above high water line and tied to a public survey corner or state coordinates .....	X		

1/ Required for other than flood detention dams

2/ Contour interval shall be such as to provide the basis for an accurate area-capacity curve or table

3/ Where earthen dams are to be constructed having other than a low hazard classification, an analysis shall be prepared covering slope and foundation stability under steady seepage conditions and where applicable an appropriate seismic loading; design of the dam shall be based on these studies

4/ Not required for dams designed in accordance with item 22

5/ May be omitted on flood detention dams designed to be emptied in 96 hours or less

6/ Including logs and locations of core or auger holes; material characteristics including strength parameters; settlement or consolidation; and permeability

Date Jul 25 1983

Signature R. L. Sauer

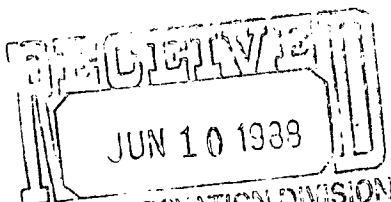


## REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

June 7, 1988



Mr. David G. Boyer  
NM Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

RE: GW & DP-28

Dear Mr. Boyer:

The following is a status report on several of the items listed on your agenda of February 2, 1988.

### West Fire Pond Water Quality

Boiler blow-down has been rerouted from the pond, and evaporation loss is being made up from city water. Pond water is expected to be equivalent to raw fresh water quality by October 1, 1988.

### Additional Evaporation Ponds

Plans and specifications for the proposed additions to the evaporation ponds have been submitted to your office and the State Engineer's office. Eight (8) observation wells have been installed for groundwater quality monitoring.

### Well Points

The ten (10) temporary points previously installed by Geoscience, south of the existing evaporation ponds have been stabilized at the surface and will be resurveyed. Groundwater level measurements will be made once a month to establish the amount of fluctuation, and provide information for installing down gradient wells at or near the property boundary.

### MW-6

During October 1987, a shallow trench was dug next to the refinery's crude oil line adjacent to MW-6 and the line itself was pressure tested. No hydrocarbon seepage was observed from the subsurface in the trench and the pressure test indicated no leakage.

During May 1988, MW-6 was examined for a floating immiscible layer by the use of gasoline cut paste. There was no indication of hydrocarbons floating on the surface of the water.

During June 1988, a 20 foot deep trench was dug adjacent to the pipeline, midway between MW-6 and the dike of evaporation pond #1. There were no indications of hydrocarbon stained soil or a floating immiscible layer of hydrocarbon groundwater in the trench. The source of any oil or grease in MW-6 is still unknown.

#### Asphalt Storage Pit

Enclosed is a drawing of the temporary asphalt storage pit. The east pit has an estimated volume of 36,400 bbls and the west pit is approximately 50,300 bbls.

The refinery does not anticipate reusing the pits with any frequency. If it should become necessary to store asphalt in the pits, then the refinery will notify OCD prior to use.

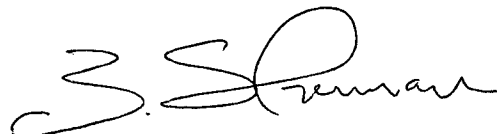
#### Filter D-105

The filter vessel referred to as the "railroad loading tank" has been removed, and the area policed as of May 31, 1988.

#### Underground Line Integrity Testing

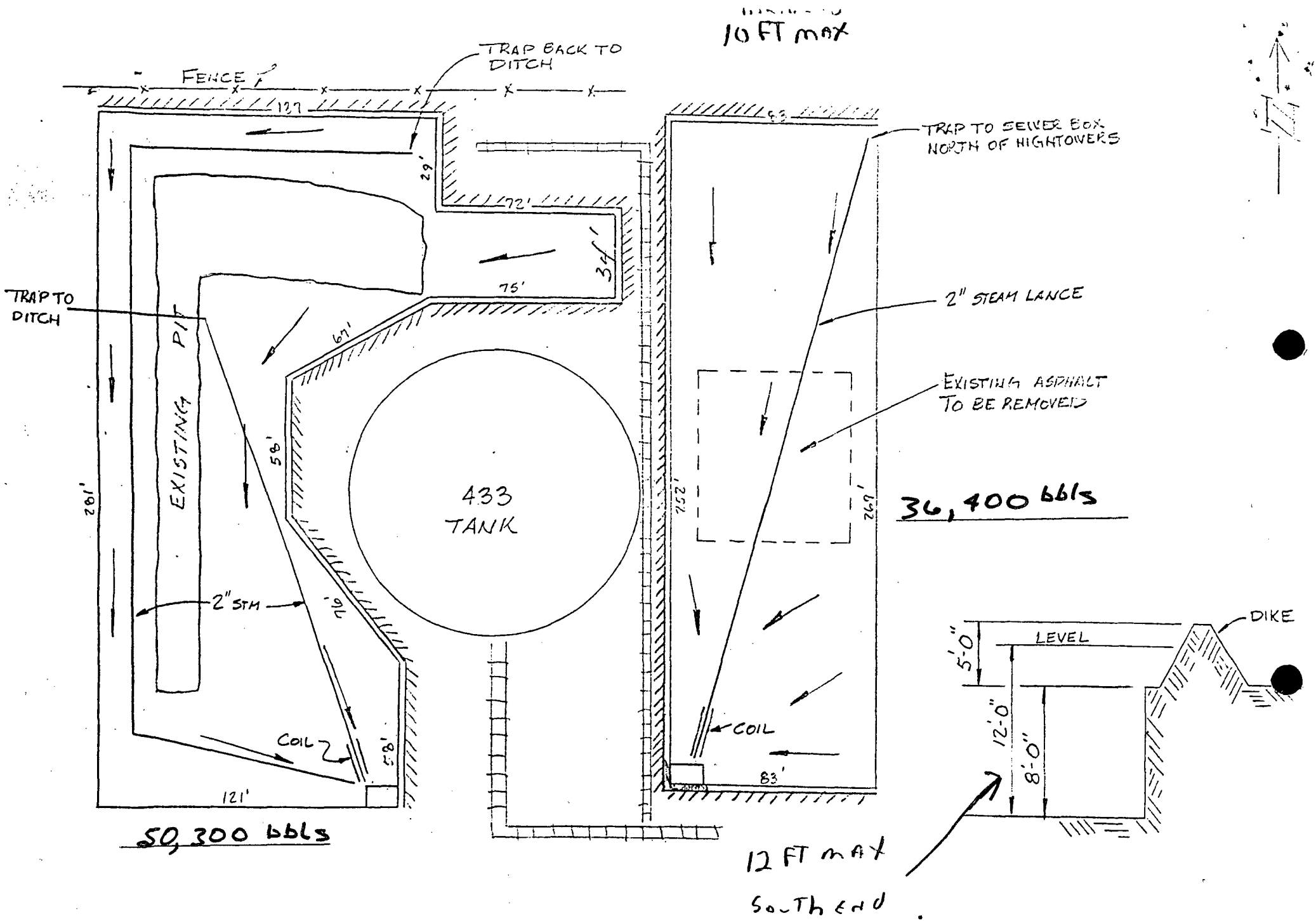
Navajo has began integrity testing of the remaining underground lines. An inventory of existing underground lines has been compiled and testing dates have been established for each of the lines. The line list and dates have been forwarded to your office and the test information will be made available to OCD upon request. The next set of lines will be tested in August 1988.

Sincerely,

A handwritten signature in cursive script, appearing to read "Zeke Sherman".

Zeke Sherman  
Environmental Engineer

ZRS/pb



6004-08





MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal

Time 10:30

Date May 24, 1988

Originating Party

Other Parties

Charles Roybal, O&L Legal

Joel M. Carson 746-3508  
(Attorney representing Navajo Refinery)

Subject Discharge Plan for Navajo Refinery

Discussion Charles called Carson to find out status of contractual arrangements for compliance with WQCC regulations off-site. By 2/16/88 letter, Navajo was given until May 16, 1988 to have completed such arrangements or committed to alternative measures to assure compliance with WQCC Regulations. The phone call was made since no response has been made by Navajo to the deadline requirements in the letter, and O&L may wish

Conclusions or Agreements To take other compliance actions. Charles reported that Carson will immediately begin work on a letter explaining current status and situation. Charles will call again on 5/31 if no letter received by then.

Distribution

Navajo file  
Charles Roybal

Signed

Charles H. Roybal



STATE OF NEW MEXICO

STATE ENGINEER OFFICE  
SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

BATAAN MEMORIAL BUILDING  
STATE CAPITOL  
SANTA FE, NEW MEXICO 87503

May 3, 1988

Mr. W. C. Chamberlain, P.E.  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

Dear Mr. Chamberlain:

The plans and specifications for Evaporation Ponds 6, 7 and 8 have been reviewed by members of my staff. Minor corrections must be made before they can be accepted for filing.

Returned herewith are the plans, specifications and State Engineer Project Checklists I and II. The items marked "no" on the checklists should be addressed. Footnote 7 on checklist II can be corrected by providing the source of information from which the maximum rainfall was obtained.

Please let me know if further discussion would be helpful.

Sincerely,

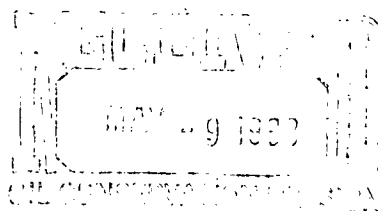
S. E. Reynolds  
State Engineer

By

  
Eluid L. Martinez, Chief  
Technical Division

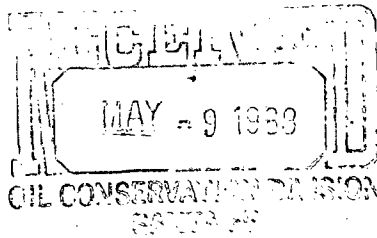
ELM\*hl

Copy: David Boyer



# MEMORANDUM

May 3, 1988



State Engineer Office  
Santa Fe, New Mexico

TO Donald T. Lopez, P.E., Chief, Design & Construction Section  
FROM Paul Saavedra, P.E., Water Resource Engineer  
SUBJECT Navajo Refining Company Evaporation Ponds 6, 7 and 8 Dam

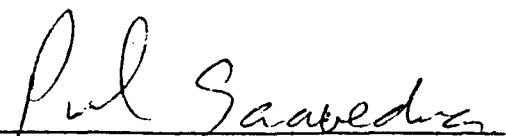
I have reviewed the plans for the Navajo Refining Company, Evaporating Ponds 6, 7 and 8 dam. The subject dam is a perimeter dam approximately 8 feet in height around ponds 6, 7 and 8. Interior dikes also 8 feet in height separate the three ponds.

Pond no. 6 will contain approximately 100 acre-feet, pond no. 7, 115 acre-feet and pond no. 8, 60 acre-feet, all at normal water level. The design allows for 3 feet of freeboard from the normal water level to the top of the dam. The dam has no spillway or outlet works. The only inflow is the pipeline from the refinery. The drainage area is the surface area of the ponds.

The 3 foot freeboard allows for 36 inches of rain which is much greater than a 100-year storm.

It should be noted that the entire area of the proposed dams appears to be within the 100-year flood plain of the Pecos River. Attached is a copy of the Flood Hazard Boundary Map dated February 7, 1978 (National Flood Insurance Program) for the area, the shaded area indicates the 100-year flood plain.

Attached are the State Engineer Office Engineering Review Checklists I and II. The items marked "no" on the checklists should be addressed before the project can be accepted for filing.

  
Paul Saavedra, P.E.

# STATE ENGINEER OFFICE

## ENGINEERING REVIEW PROJECT CHECK LIST

Revised January 9, 1984

### I. General, Plans and Specifications

Applicant: Navajo Refigning Company, Evaporation Ponds 6, 7 & 8 File #

Requirement			Not appli- cable
	Yes	No	
1. Filing sheet (original drawings or mylar reproductions) Size, 36" x 24" .....	X		
2. Plans (original drawings or mylar reproductions) Size, 36" by 24" .....	X		
3. One-inch margin on all sides of drawings .....	X		
4. Sheets numbered in sequence .....	X		
5. Filing sheet separate from detail sheets .....	X		
6. Carefully and neatly prepared with waterproof India ink .....	X		
7. All signatures in waterproof black ink .....	X		
8. Rolled instead of folded .....	X		
9. Standard engineer's scale of sufficient size .....	X		
10. Distances and dimensions shown in feet and decimals thereof or metric equivalent .....	X		
11. Platted to true meridian .....	X		
12. Area location map included .....	X		
13. Map title and statements shown on the filing sheet .....	X		
14. Engineer's stamp or seal impressed on filing sheet .....	X		
15. Engineer's certificate of registration and preparation on filing sheet .....	X		
16. Claimant's certificate (special for corporations) on filing sheet .....	X		
17. Notary Public's signature and seal or stamp impressed on filing sheet in acknowledgement to claimant's certificate .....	X		
18. Certificate form for State Engineer's acceptance on filing sheet .....	X		
19. Specifications included .....	1/		
20. Engineer's certification of registration and preparation on specifications .....			1/
21. Engineer's stamp or seal impressed on specifications .....			1/
22. Certificate form for State Engineer's acceptance on specifications .....			1/
23. Statement in specifications recognizing the authority of the State Engineer regarding inspection during construction and full power to act if specifications are not met .....		X	
24. Cost estimate .....	X		
25. Filing fees .....	X		

Note: Stock-water reservoirs in excess of 10 acre-feet shall comply with State Engineer Order Number 68 dated March 10, 1957.

1/ Specifications not submitted separately but provided on the plans.

Date April 29, 1988

Signature

*Paul Sawedra*

STATE ENGINEER OFFICE  
ENGINEERING REVIEW  
PROJECT CHECK LIST  
Revised January 9, 1984

II. Dam and Appurtenances

Applicant: Navajo Refining Company Evaporation Ponds 6, 7 & 8 File # \_\_\_\_\_

Requirement	Not		
	Yes	No	appli- cable
1. Map of drainage area .....	7/		
2. Hazard classification (criteria in SCS TR-60 acceptable).....	x		
3. Average annual yield of drainage area in acre-feet <u>1/</u> .....		7/	
4. Topography of proposed reservoir <u>2/</u> .....	x		
5. Area-capacity table or curve for the reservoir to the dam crest		8/	
6. Detailed dam site topography .....	x		
7. Dam site profile along centerline showing foundation materials geology and construction features .....	9/		
8. Maximum dam section and dam section along outlet works .....			x
9. Upstream slope not steeper than 2-3/4 to 1 (below spillway) <u>3/</u>		10/	
10. Downstream slope not steeper than 2 to 1 <u>3/</u> .....	x		
11. Minimum crest width = $2(h)^{2/3} + 3'$ (minimum 8') <u>3/</u> .....	x		
12. Freeboard above maximum high water elevation, minimum 5 feet <u>4/</u>		7/	
13. Riprap and bedding gravel on face of dam <u>5/</u> .....			x
14. Analyses of construction materials submitted .....	9/		
15. Foundation investigation <u>6/</u> .....	9/		
16. Cutoff trench provided .....	x		
17. Outlet works design (complete with hydraulic properties); minimum 18" pipe .....			x
18. Flood detention dams shall be ungated and the principal spillway (or outlet) of flood detention dams should be designed to empty the flood pool within 96 hours and to empty the sediment pool at the maximum practicable rate .....			x
19. Make and type of gates .....			x
20. Detailed spillway topography .....			x
21. Spillway design hydrograph (criteria set forth in SCS TR-60 )			
22. Freeboard design hydrograph (are acceptable for items 21 & 22)		7/	
23. Spillway design hydraulics and capacity .....			x
24. Normal and maximum water surface elevation .....	x		
25. Outlet works tied to public survey corner or state coordinates		x	
26. Permanent bench mark established above high water line and tied to a public survey corner or state coordinates .....		x	

1/ Required for other than flood detention dams

2/ Contour interval shall be such as to provide the basis for an accurate area-capacity curve or table

3/ Where earthen dams are to be constructed having other than a low hazard classification, an analysis shall be prepared covering slope and foundation stability under steady seepage conditions and where applicable an appropriate seismic loading; design of the dam shall be based on these studies

4/ Not required for dams designed in accordance with item 22

5/ May be omitted on flood detention dams designed to be emptied in 96 hours or less

6/ Including logs and locations of core or auger holes; material characteristics including strength parameters; settlement or consolidation; and permeability

7/ Drainage area is surface area of the ponds, natural inflow would be rain on the surface are.

8/ Area capacity curve stops at normal water elevation.

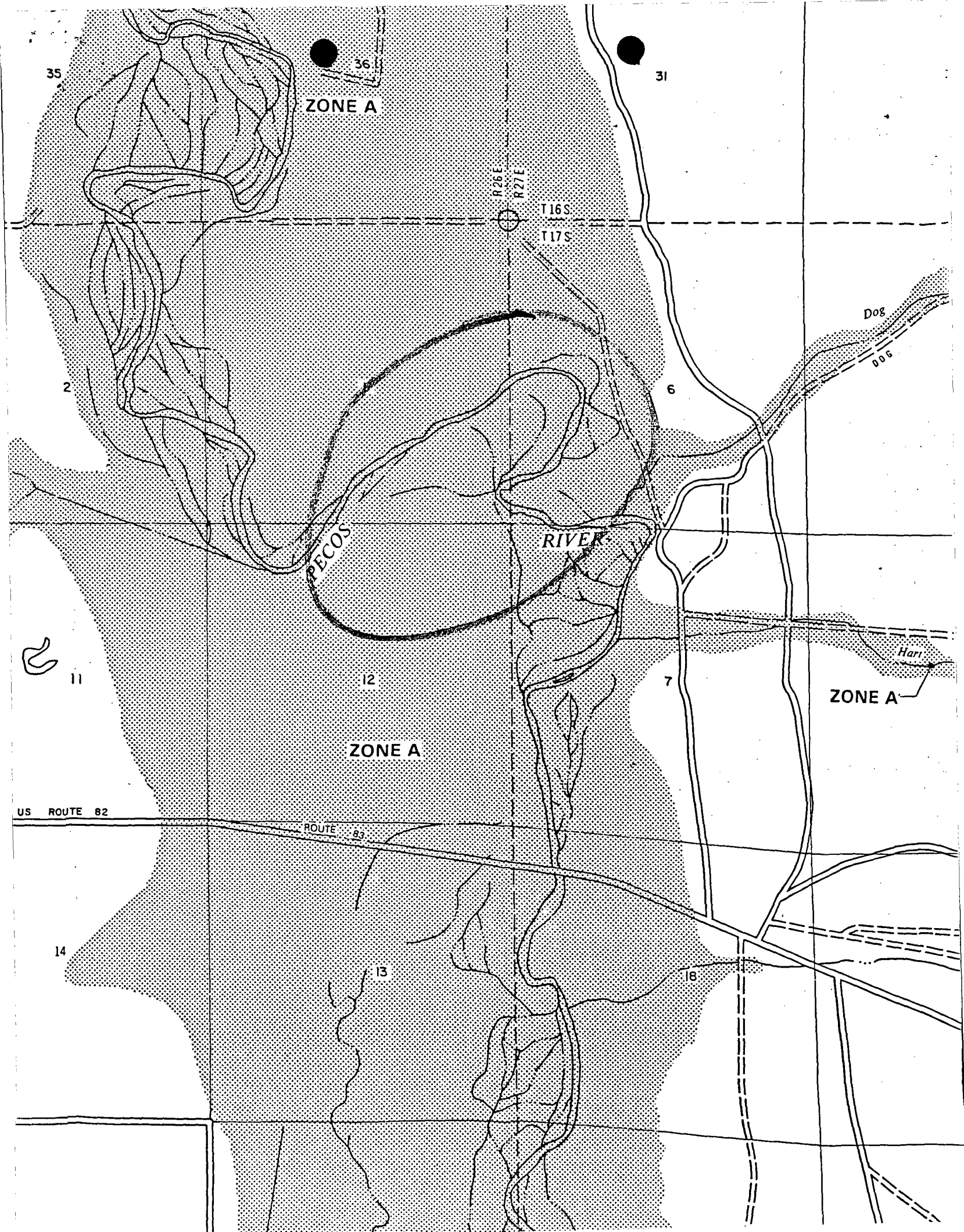
9/ One test hole was drilled.

10/ Dike section has water on both sides and each side has a slope of 2H to 1V.

Date April 29, 1988

Signature

*Paul Sacwedon*





AN INTERNATIONAL PROFESSIONAL SERVICES ORGANIZATION

URS CONSULTANTS  
3500 NORTH CAUSEWAY BOULEVARD  
SUITE 900  
METAIRIE, LOUISIANA 70002-3527  
(504) 837-6326

ATLANTA  
BOSTON  
BUFFALO  
CLEVELAND  
COLUMBUS  
DENVER  
LOS ANGELES  
NEW YORK  
PARAMUS, NJ  
NEW ORLEANS  
SAN FRANCISCO  
SAN MATEO  
SEATTLE  
WASHINGTON, D.C.

May 3, 1988

Mr. David Boyer  
Oil Conservation District  
State Land Office Building  
Room 206  
P.O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Subject: Navajo Refining Company  
Spill Prevention Control & Countermeasure Plan  
URS. No. 46019.00

As we discussed, I am enclosing a copy of the SPCC plan for the Navajo refinery. As indicated in the spill plan, there are some engineering modifications which are required at the plant to provide adequate secondary containment for some of the truck racks and tanks. Navajo has hired an additional temporary staff engineer to work on upgrading these deficiencies.

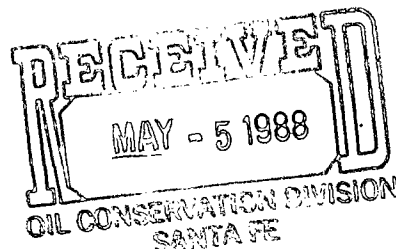
If you have any questions or comments, please do not hesitate to call me.

Sincerely,

URS CONSULTANTS

Sue Bottom

cc: D. Griffin



Meeting with Navajo Refinery 4/13/88

Attending:

Joel Carson - Attorney for Navajo  
Dewie Stevenson - Navajo Refinery Manager  
Zeke Sherman - Navajo Environmental  
David Boyer - O&S Santa Fe

Met to discuss progress of land acquisition for property S. of ponds. No success to date as to purchase estate of Frank A. Storey (S 1/2 NENE, and SENE Sec 12), or Holt heirs (SENE, SWNE Sec 12). Storey won't sell; haven't yet located all Holt heirs.

Told Vernon Carson to go ahead and contact SED about alternative plan. He will write letter to O&S to satisfy requirement ~~commitment~~ made for extension of time to discharge w/out approved plan.

Told Navajo that O&S would likely not grant another extension w/out explaining the reasons to the WQCC. Had granted continual extensions in past and felt uncomfortable about additional.



4/13/88 (2)

Told Zeke Sherman that O&B would return week of May 9 to sample new monitor wells and review progress. Zeke said SPCC plan to be sent to S.S. by April 30.

Notes of Ray

TELEPHONE  
(505) 748-3311

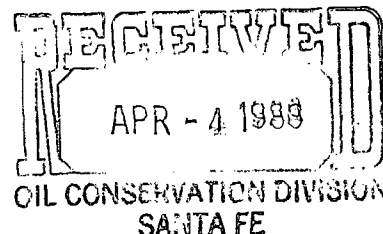


## REFINING COMPANY

501 EAST MAIN STREET O P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

March 31, 1988



Mr. David G. Boyer  
Hydrogeologist  
P.O. Box 2088  
Santa Fe, NM 87501

RE: Navajo Refinery Commitments for Discharge Plan

Dear Mr. Boyer:

Enclosed is an inventory of active liquid hydrocarbon underground lines.

We have been able to establish testing periods for all lines except those that can only be tested when an associated Process Unit is down for repairs, which may not occur on an annual basis. It is probable that we will need to revise the dates as we discover that it is more efficient to test a certain set of lines at a particular time than otherwise, and as we reroute lines above ground.

The general test method will be to isolate a section of line and apply pump pressure until the line is at or above normal operating pressure. The line is then observed for pressure loss. If pressure loss occurs, the cause will be determined and corrective actions can be taken.

A report containing the test date, test pressure, length of test pressure observation, and a brief description of any alternate test method or corrective action due to pressure drop, will be available at OCD's request.

We have revised Navajo's SPCC plan and are reviewing the draft before submitting it to OCD. We are requesting a 30 day extension for the submission date of the SPCC plan (April 30, 1988) to perform the review and any further revisions.

Mr. David G. Boyer  
Page 2

We also request that dates for actions on TK-122 (June 1, 1988) and TK-135 (March 31, 1988) be switched. Tank 122 has been dismantled and removed, but seam repairs for TK-135 can not be effected until sometime before June 1, 1988.

If you have any questions, please contact me at (505) 748-3311, extension 281.

Regards,

A handwritten signature in black ink, appearing to read 'Zeke Sherman', with a large, stylized 'Z' and 'S'.

Zeke Sherman  
Environmental  
Engineer

ZRS/pb

attachment

NAVAJO REFINING COMPANY  
UNDERGROUND LINES

3/29/88  
ZRS/pb

(Revised March 1988)

Hydrocarbon - North Division

Testing Date

- |   |   |
|---|---|
| 1. 4" Abo crude delivery line from just north of Holly Energy yard to just south of 836-TK. This line was tested at 190 lbs.  | Feb/Mar '88<br>Lynn Berry   |
| 2. 6" sour crude line from just north of Holly Energy yard to above ground, west of 836-TK where trucks unload. This line is above ground in three places.            | Feb/Mar '88<br>Lynn Berry   |
| 3. Crude booster line to unit 6" underground at end of pipe stanchion by gas drum and comes up 4" under Amine concrete pad. Two clamps on the 6" in this area. (100') | Testable only<br>when unit is<br>down every 2<br>years.<br>Ray Tice |
| 4. Crude truck unloading line west of 836-TK on Freeman Street 3" from meter to manifold south of meter.  | Jan/Feb '88<br>Lynn Berry   |
| 5. CBO and heavy oil loading line 3" goes underground east of truck rack, goes west and comes up at railroad loading spur. (50')                                      | August '88<br>W. Gleghorn   |
| 6. Interplant transfer line, 4" goes underground north of 11-TK and above at North Water Treater. (70')   | August '88<br>W. Gleghorn   |
| 7. 12" diesel booster pump suction from 837-TK and 838-TK inside fore wall at 838-TK to pump at north of 63-TK.   | Jan/Feb '88<br>Lynn Berry   |
| 8. Diesel booster pump from 837 and 838 discharge, 6" across Freeman Street, northeast of 63-TK to pump north of TK-63.   | November '88<br>Lynn Berry  |

Hydrocarbon - South Division

Testing Date

- |   |                       |
|---|-----------------------|
| 1. S.D. Crude Unit diesel rundown, 6" under Texas Street, north of 413-TK. (90')  | April '89<br>Ray Tice |
| 2. Gas oil rundown and unloading line, 4";<br>(a) under alleyway north of 432-TK, and<br>(b) under alleyway north of 432-TK. (100') | April '89<br>Ray Tice |

Underground Lines

Page 2

- |     |  |   |
|-----|--|---|
| 3.  | S.D. crude booster line, 6";<br>(a) from crude booster pump to south<br>side of Mosley Street,<br>(b) under Chisum Street, and<br>(c) under alleyway north of 106-TK.  | Testable only<br>when unit is<br>down every 2<br>years.<br>Ray Tice |
| 5a. | Blender rundown line to 413-TK, 6" under<br>Texas Street, south of 418-TK to 413-TK. (150')  | August '88<br>W. Gleghorn   |
| 5b. | Blender rundown line to 111-TK and 112-TK,<br>6" under firewall just east of 111-TK. (20')   | August '88<br>W. Gleghorn   |
| 6.  | Pipeline suction to booster pump at 111-TK,<br>6" diesel under firewall just east of 111-TK.   | Sept '88<br>Lynn Berry  |
| 7.  | Jet A suction line from 419-TK, 12" to 8"<br>product booster line station. (80')   | Sept '88<br>Lynn Berry  |
| 8.  | No lead suction at 106-TK to outside of<br>firewall, 12". (20')  | Sept '88<br>Lynn Berry  |
| 9.  | Abo crude delivery line, 4" from meters and<br>115-TK to outside of firewall east of 437-TK.   | Sept '88<br>Lynn Berry  |
| 10. | Sour crude delivery line, 6" from meters at<br>115-TK to outside firewall east of 437-TK.  | Sept '88<br>Lynn Berry  |
| 11. | Crude truck unloading line, 4" from meter<br>outside of firewall to connection inside<br>firewall on 6", at 437-TK.  | Sept '88<br>Lynn Berry  |
| 12. | Truck rack loading pump discharge from pumps<br>and pump suction, located east of 419-TK to<br>loading rack, all 6" and 8";<br>(a) Jet A - Kero from 419-TK<br>(b) Diesel from 418 and/or 434-TK<br>(c) Regular from 111-TK<br>(d) No Lead from 417-TK | October '88<br>Lynn Berry   |
| 13. | 12" suction line from 413 to new manifold at<br>booster station, north of 419.   | October '88<br>Lynn Berry   |
| 14. | 8" suction line from 413 to tank loading pump<br>(regular).  | October '88<br>Lynn Berry   |

- |   |                              |
|---|------------------------------|
| 15. 6" suction line from 413 to booster pump south of 111-TK.   | March '89<br>Lynn Berry      |
| 16. 12" suction line from 417 to new booster station north of 419-TK.   | March '89<br>Lynn Berry      |
| 17. PFGO and AGO line, 3" underground at Chisum Street crossing. (60')  | April '89<br>Ray Tice        |
| 18. 6" cold gas oil charge line to FCC, under alleyway north of 432-TK. (75')   | April '89<br>Ray Tice        |
| 19. 6" pipeline discharge of product booster pump to pipe stanchion just east of 113-TK. (200')   | March '89<br>Lynn Berry      |
| 20. 6" suction from 411-TK and 412-TK to transfer pump south of 115 underground, west of both tanks, until it gets to the pipe stanchion way, south of 411. (300')                      | August '88<br>W. Gleghorn    |
| 21. 6" suction from 411-TK and 412-TK to filtering pump, west of 411 and suction to pipeline booster pump just south of 115 butane tank.  | August '88                   |
| 22. 6" suction to blender component pump, short suction, south of 415-TK about 25 feet. This line is the FCC component from 401, 402 and 415 and is above ground most of the way. (25') | August '88<br>W. Gleghorn    |
| 23. 8" new product pipeline to El Paso crosses truck by-pass north of No. 2 warehouse, then goes east across lease, north of 401-TK and 402-TK.   | Tested Monthly<br>Lynn Berry |
| 24. 10" old truck rack suction north of 413-TK.   | April '89<br>Lynn Berry      |
| 25. 12" pipeline suction off 413-TK. Goes to 8" El Paso suction.  | April '89<br>Lynn Berry      |
| 26. 8" pipeline at 413-TK. Goes to 6" El Paso suction.  | April '89<br>Lynn Berry      |
| 27. 8" line to truck rack pump underground south of 419-TK.   | April '89<br>Lynn Berry      |
| 28. 6" pump discharge to 400-TK and FCC under alleyway south of 438-TK.   | April '89<br>Ray Tice        |

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

EASYLINK  
62905278

March 17, 1988

Mr. David Boyer  
Hydrogeologist  
P.O. Box 2088  
Santa Fe, New Mexico 87501

RE: Navajo Refinery Commitments For Discharge Plan

Dear Mr. Boyer:

Please find enclosed copies of plans and specifications for Navajo's evaporation ponds expansion project. We have provided Mr. Don Lopez of the State Engineer's Office the originals for his review.

Contact me at (505) 748-3311 if I can be of any further assistance.

Regards,

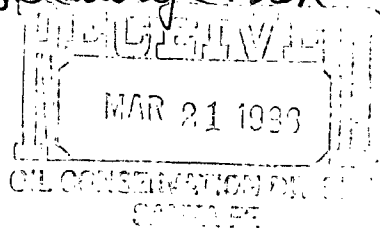
Zeke Sherman  
Environmental Engineer

ZRS:ks

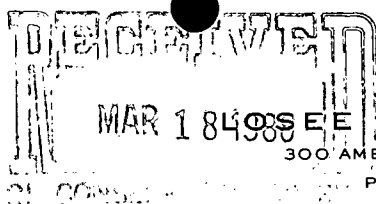
Enclosures

*Memo to file on  
Phone conversation with Zeke Sherman 3/21:  
This letter is only correspondence regarding  
2/11/88 Navajo Commitments for Discharge Plan.  
Therefore, Commitments are  
now binding.*

*DT Boyer  
3/21/88*



A. J. LOSEE  
JOEL M. CARSON  
JAMES E. HAAS  
ERNEST L. CARROLL



LAW OFFICES  
LOSEE & CARSON, P. A.  
300 AMERICAN HOME BUILDING  
P. O. DRAWER 239  
ARTESIA, NEW MEXICO 88211-0239

AREA CODE 505  
746-3508  
TELECOPY  
746-6316

15 March 1988

Mr. David Boyer  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Navajo Refining Company

Dear David:

This letter will confirm our telephone conversation of March 14, 1988. We are still negotiating for the land adjacent to the ponds, but we have not as yet acquired the necessary property.

Yours truly,

LOSEE, CARSON, HAAS & CARROLL, P.A.

Joel M. Carson

JMC:bjk

cc: Mr. Henry Stern  
Mr. David Griffin



# Affidavit of Publication

No. 12260

STATE OF NEW MEXICO,

County of Eddy:

..... Gary D. Scott ..... being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of

the State of New Mexico for ..... 1 ..... consecutive weeks on the same day as follows:

First Publication March 10, 1988

Second Publication

Third Publication

Fourth Publication

and that payment therefore in the amount of \$

has been made.

Subscribed and sworn to before me this 14th day

of March, 1988.

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1991

# Cop. of Publication

ronmental Affairs Superintendent, P. O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a modification to the previously submitted ground water discharge plan application for its refining facility located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/water separator and a newly constructed waste water treatment plant prior to disposal in approximately 145 acres of evaporation ponds located three miles east of the refinery adjacent to the Pecos River. The modification requested is an increase of 60 acres from the 85 acres previously requested. The refinery effluent has a total dissolved solids content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 15 feet and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

(GW-17) Acid Engineering, Loyd Bolding, owner, P.O. Box 753, Kilgore, Texas 75662, has submitted an application for renewal of its previously approved discharge plan for its Hobbs service facility located in Section 36, Township 18 South, Range 37 East, (NMPM) Lea County, New Mexico. Approximately 300 gallons per day of waste containing 0.1% hydrochloric acid by weight will be dis-

charged to a fiberglass tank. The waste water will be recycled as makeup water in the oil well treatment process. Ground water most likely to be affected by a discharge at the surface is at a depth of approximately 46 feet with a total dissolved content of approximately 1400 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of March. To be published on or before March 11, 1988.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION

s- W. J. LeMay  
WILLIAM J. LEMAY  
Director

SEAL  
Published in the Artesia Daily  
Artesia, N.M. March  
10, 1988.

Legal 12260

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS AND  
NATURAL RESOURCES  
DEPARTMENT  
OIL CONSERVATION  
DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal and discharge plan modification have been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800; (GW-28) Navajo Refining Company, David Griffin, Envi-



**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE**

Ecological Services  
Suite D, 3530 Pan American Highway NE  
Albuquerque, New Mexico 87107

March 17, 1988

RECEIVED

MAR 21 1988

OIL CONSERVATION DIVISION

Mr. William J. Lemay, Director  
Oil Conservation Division  
New Mexico Energy, Minerals and  
Natural Resources Department  
Villagra Building  
Santa Fe, New Mexico 87503

Dear Mr. Lemay:

This letter responds to the undated public notice for proposed discharge plans submitted to your division. We have reviewed the following plans and have not identified any resource issues of concern to our agency. Renewal of these plans should not have a significant impact upon plants, fish, shellfish or wildlife resources of New Mexico.

(GW-28), Navajo Refining Company, Eddy County, New Mexico.  
(GW-17), Acid Engineering, Lea County, New Mexico.

These comments represent the views of the Fish and Wildlife Service. Thank you for the opportunity to review and comment on the proposed plans. If you have any questions concerning our comments please contact Tom O'Brien at (505) 883-7877 or FTS 474-7877.

Sincerely yours,

Michael J. Donahoo  
Acting Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico  
Director, New Mexico Health and Environment Department, Environmental  
Improvement Division, Santa Fe, New Mexico  
Regional Administrator, Environmental Protection Agency, Dallas, Texas  
Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife  
Enhancement, Albuquerque, New Mexico

**AFFIDAVIT OF PUBLICATION**

State of New Mexico,  
County of Lea.

I, \_\_\_\_\_

William H. Shearman, Jr.

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of \_\_\_\_\_

One weeks.

Beginning with the issue dated

March 10, 1988

and ending with the issue dated

March 10, 1988

Bill Shearman  
Publisher.

Sworn and subscribed to before

me this 15 day of

March, 1988

Vera Murphy  
Notary Public.

My Commission expires \_\_\_\_\_

November 14, 1988  
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

**LEGAL NOTICE  
March 10, 1988  
NOTICE OF  
PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS  
AND NATURAL  
RESOURCES  
DEPARTMENT  
OIL CONSERVATION  
DIVISION**

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(GW-28) Navajo Refining Company, David Griffin, Environmental Affairs Superintendent, P.O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a modification to the previously submitted ground water discharge plan application for its refining facility located in the SE/4 Section 4, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/water separator and a newly constructed waste water treatment plant prior to disposal in approximately 145 acres of evaporation ponds located three miles east of the refinery

adjacent to the Pecos River. The modification requested is an increase of 60 acres from the 85 acres previously requested. The refinery effluent has a total dissolved solids content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 15 feet and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

(GW-17) Acid Engineering, Lloyd Bolding, owner, P.O. Box 753, Kilgore, Texas 75662, has submitted an application for renewal of its previously approved discharge plan for its Hobbs service facility located in Section 36, Township 18 South, Range 37 East, (NMPM) Lea County, New Mexico. Approximately 300 gallons per day of waste water containing 0.1% hydrochloric acid by weight will be discharged to a fiberglass tank. The waste water will be recycled as makeup water in the oil well

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of March. To be published on or before March 11, 1988.

**STATE OF  
NEW MEXICO  
OIL CONSERVATION  
DIVISION  
W. J. LeMay,  
Director  
(Seal)**

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS  
AND NATURAL

RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

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(GW-28) Navajo Refining Company, David Griffin, Environmental

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of March, 1988.

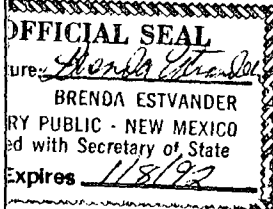
STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION  
s/WILLIAM J. LEMAY, Director  
Journal, March 11, 1988

STATE OF NEW MEXICO 1988  
County of Bernalillo ss  
**THOMAS J. SMITHSON**

being duly sworn declares and

says that he is **NATL ADV. MGR.** of the Albuquerque Journal, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 11 day of March, 1988, and the subsequent consecutive publications on 11/8/92.



Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 11 day of March, 1988.

PRICE \$31.26

Statement to come at end of month.

ACCOUNT NUMBER C80932

P.O. GW-28 GW 17  
110 Lind



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

March 8, 1988

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Zeke Sherman  
Environmental Engineer  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, NM 88210

RE: Discharge Plan for Navajo Refinery, DP-28

Dear Mr. Sherman:

This letter is a follow-up to our discussion by telephone of March 3, 1988. During that conversation we discussed several issues including placement and construction of new monitoring wells. I request that Navajo Refinery use the following guidelines in locating and installing the new monitoring wells:

1. A well is being required by OCD to be located at the southern boundary of the proposed 80-acres to be acquired by Navajo. The east-west location is to be determined after submittal of water levels in several of the well points installed by Navajo in the spring of 1987. These points are not useful for water quality monitoring but are excellent for use as piezometers to determine flow direction from the ponds. If they can be located, stabilized and surveyed they can provide much meaningful data with little additional expense. The points necessary to establish water levels for a location for a new monitor well are:

P 87-1	P 87-14
P 87-2	P 87-15
P 87-3	P 87-16
P 87-4	P 87-17
P 87-13	p 87-19

Provide elevation and water levels for these points. In addition please provide water levels (and elevation and location data if not previously

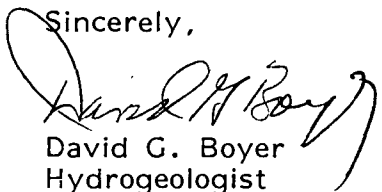
supplied and/or verified) for MW-3, 4, 5, 6, and 7. All water levels for well points and monitoring wells should be taken the same day if possible.

2. When all ponds and the adjacent monitoring wells have been completed, submit in final tabular form, X-Y coordinate locations and elevation coordinates for all monitor wells and well points used as piezometers; and maximum elevations (less freeboard) for water in the ponds. This information will be computerized by us to map water levels.
3. Attached is a typical monitor well of the design used in the earlier RCRA wells that you can use as a guide. Our only requirements are that you have a minimum of ten (10) feet of saturated thickness but that the maximum saturation does not exceed fifteen (15) feet, that the top of the screen not be submerged, that the filter pack top be placed about 12 inches above the top of the screens (to prevent bentonite migration) and that adequate surface casing and cement be placed to stabilize and seal the well. PVC may be used instead of stainless steel for the well itself.

On February 19, 1988 we sent Navajo a list of discharge plan commitments agreed to at the Navajo-OCD meeting of February 11, 1988. These were prepared from our notes and our understandings of the commitments made by Navajo. Please review these for any serious misinterpretations and notify us so that those points may be discussed further. Unless we hear from you by March 21, we will consider the comments binding.

If you have any questions, please contact me at 827-5812.

Sincerely,

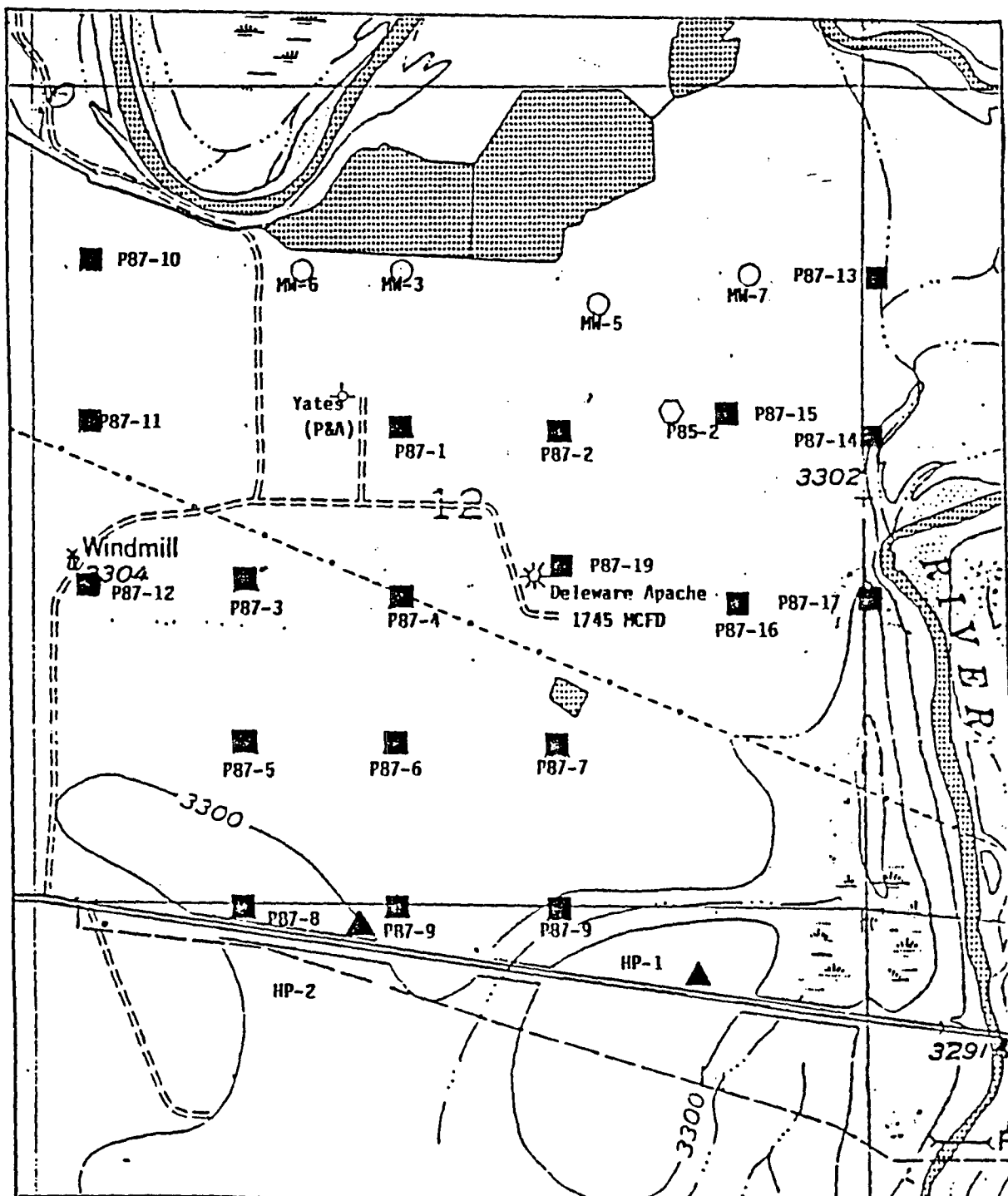


David G. Boyer  
Hydrogeologist  
Environmental Bureau Chief

DGB/ag

cc: OCD-Artesia

*Attachments*



# LOCATIONS OF WELL POINTS

## EVAPORATION POND AREA

- MW-6 Monitor Well
- P87-1 Point installed in this study (1987)
- ◊ P85-2 Point installed in earlier study (1985)
- ▲ HP-2 Point installed by unknown agency

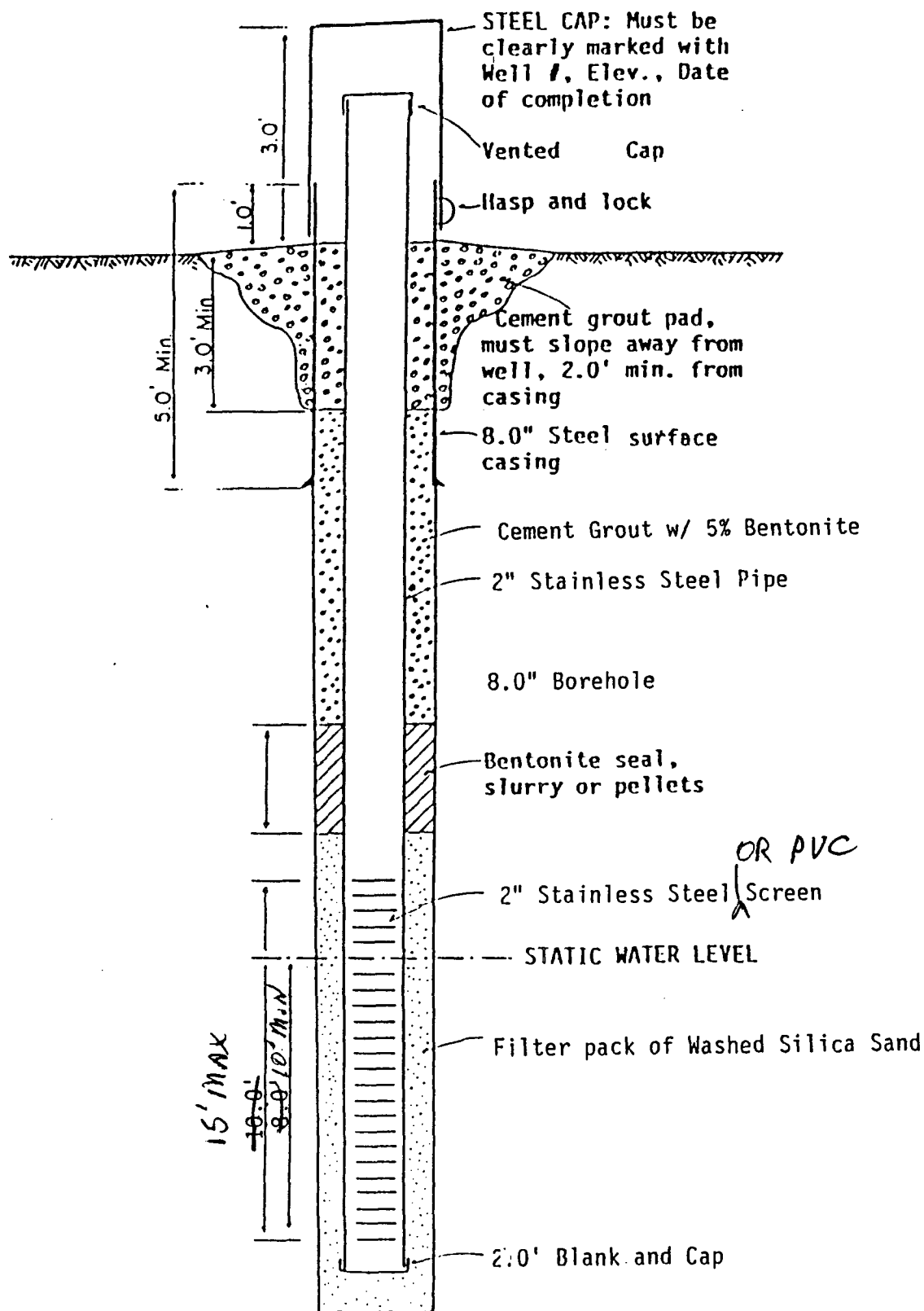


Figure 6-1  
TYPICAL MONITOR WELL DESIGN



NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal and discharge plan modification have been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-28) Navajo Refining Company, David Griffin, Environmental Affairs Superintendent, P. O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a modification to the previously submitted ground water discharge plan application for its refining facility located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/ water separator and a newly constructed waste water treatment plant prior to disposal in approximately 145 acres of evaporation ponds located three miles east of the refinery adjacent to the Pecos River. The modification requested is an increase of 60 acres from the 85 acres previously requested. The refinery effluent has a total dissolved solids content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 15 feet and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

(GW-17) Acid Engineering, Lloyd Bolding, owner, P. O. Box 753, Kilgore, Texas 75662, has submitted an application for renewal of its previously approved discharge plan for its Hobbs service facility located in Section 36, Township 18 South, Range 37 East, (NMPM) Lea County, New Mexico. Approximately 300 gallons per day of waste water containing 0.1% hydrochloric acid by weight will be discharged to a fiberglass tank. The waste water will be recycled as makeup water in the oil well treatment process. Ground water most likely to be affected by a discharge at the surface is at a depth of approximately 46 feet with a total dissolved content of approximately 1400 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of March. To be published on or before March 11, 1988.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*W. J. Lemay*

WILLIAM J. LEMAY, Director

S E A L

## MINUTES

A meeting to discuss the Navajo Refining Company Discharge Plan was held at 9 o'clock a.m. on February 11, 1988, in the Oil Conservation Division Conference Room, State Land Office Building, Santa Fe, New Mexico. The following people attended the meeting:

Oil Conservation Division - William J. LeMay  
David Boyer  
Roger Anderson  
Charles Roybal

Navajo Refining Company - D. O. Stevenson  
Joel Carson - Losee & Carson  
Matt Clifton  
David Griffin

Holly Corporation - Henry Stern

David Boyer presided at the meeting. He explained that Navajo has been under requirements since 1980 to get an approved discharge plan and the latest time extension expired on January 15, 1988. He stated that the purpose of this meeting was to clarify what the remaining deficiencies in the proposed discharge plan are and what remaining commitments are required from Navajo. Mr. Griffin declared there is no problem with housekeeping and tankage items and a timeframe for these items will be submitted next week. Mr. Clifton requested that the focus of this meeting be on the contamination problem.

Mr. Carson discussed the covenant required by Mr. Boyer in which landowners will agree not to drill a domestic well south of the pond. He told of efforts to buy the land in Section 12 through a real estate agent. Mr. Carson agreed to provide ownership plats of the area involved in Sections 7 and 12. It was pointed out that a corner of the pond may lie on property not belonging to Navajo. Mr. Carson stated that attempts to buy the land will continue but if it cannot be bought, he will pursue the possibility of getting the State Engineer to intercede with some sort of regulation that will not allow for the approval of a domestic well in the subject area. He pointed out that there are no water rights in the area so no wells may be drilled for irrigation purposes. Mr. Roybal expressed doubt that the State Engineer would have the authority to make a regulation prohibiting the drilling of domestic wells. Mr. Carson stated that there is already one well on the subject 80-acre block of land but Mr. Anderson pointed out that if this well is not pulling out the allowable given in its permit, another well can be drilled. Mr. Carson asked for a period of two months in which to pursue the acquisition of the land and

if Navajo is successful, it will issue the required covenants. Mr. Boyer suggested that the ownership of Section 7 should also be looked into because there may eventually be problems in that area.

Mr. Griffin discussed plans for a new pond and the location of cut points in existing dikes which will basically make a plug flow situation. This would represent maximum pond capacity for the land owned by Navajo. Mr. Boyer agreed that this will be a good idea but some monitoring will be required. The primary interest of concern has been the location of wastewater entry to the pond and Mr. Griffin assured that maximum effort has been taken to extend the wastewater residence time. Mr. Anderson stated that freeboard should be in a three foot range and told of a recent opinion issued by the State Engineer's Office defining a "dam." He said that the State Engineer will have to approve the construction of large wastewater impoundments. Mr. Boyer agreed that this information on new ponds will be considered as part of Navajo's discharge plan submittal.

Mr. Boyer recommended granting a 90-day extension of time to Navajo with 30 and 60-day updates on the progress of land acquisition or covenants. He agreed to go to public notice on the ponds and work out the details with Navajo. If, at the end of 60 days, Navajo finds it cannot purchase the lands involved, another meeting will be held to discuss alternatives.

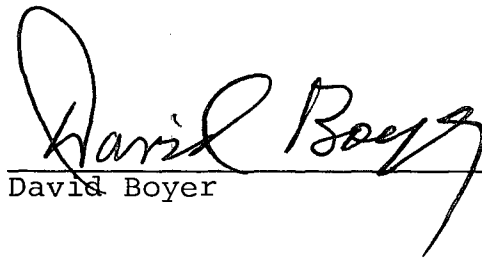
Mr. Clifton discussed the closure plan on the ditch and Pond 1. Mr. Boyer requested that a copy of everything submitted to EPA be sent to the Oil Conservation Division. If EPA does not require closure, then Navajo should so notify the Division within the same 90-day time period. Mr. Boyer said he would accept a commitment from Navajo that they will submit a detailed plan of closure within six months.

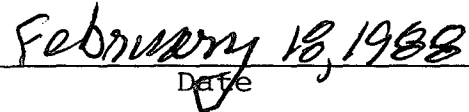
It was pointed out that any plant over 25 years old is required to test its underground wastewater piping capacity. Navajo has already replaced some wastewater piping and will identify the older piping and set up a schedule of shutdowns according to Mr. Griffin. Mr. Stevenson discussed several problems involved with the testing and expressed doubt that the testing can be accomplished. Mr. Anderson described hydrostatic tests which will test any pipe if a section of the pipe can be isolated. Mr. Boyer suggested that Navajo break out the systems by quality and test only the ones which have the nasty and acid water but not the ones with the good grade of wastewater.

Page 3  
Minutes of the Meeting  
Held on February 11, 1988

He said that Navajo may have to think about replacing the pipe that cannot be tested. Mr. Griffin stated that Navajo does replace several sewers every year but has no prescribed schedule for the replacement.

The meeting was adjourned at 10:25 a.m.

  
\_\_\_\_\_  
David Boyer

  
\_\_\_\_\_  
Date

Copy sent to Navajo 2/19/88

NAVAJO REFINERY COMMITMENTS FOR DISCHARGE PLAN  
(Agreed to at OCD/Navajo Meeting 2/11/88)

DATE	COMMITMENT
March 31, 1988	Revision of SPCC Plan to OCD. o/c
March 31, 1988	Navajo to begin positive pressure testing on underground oil/product piping. Supply 6/c generalized testing description. Annual retest required with report to OCD annually summarizing test results and action taken.
March 31, 1988	Tank 135 seam repairs completed.
June 1, 1988	Report on study of oil and grease found in MW 7 -6 to be provided.
June 1, 1988	Tank 122 dismantled and removed.
July 1, 1988	RR Loading Tank (D-105 filter tank) removed o/c and area policed.
July 31, 1988	Tank 133 seam repairs completed.
October 1, 1988	Fire pond water quality will be made equivalent to raw fresh water either by use for fire training or by drainage and refilling. <i>Boiler blowdown not permitted</i>
October 1, 1988	Carbon black oil (CBO) area policed.
October 1, 1988	Removal of tracks at South Division rail loading area, completion of earthwork and guttering, and submittal of as-built plans.
December 31, 1988	Plans to OCD for catchment and drainage improvements at South Division for tanks (and associated transfer pumps) at tanks 130, 132, 133, 135. Specifications to have 1989 completion dates. (Ref: p. 2 Navajo letter of 1/11/88.)
December 31, 1988	Plans and specifications (as above) for modifications to North Division CBO and tank area (including tanks and pumps at tanks 18, 58-61, 837, 838), rail loading area, and salt filtering area near north API separator (including appropriate flood protection). Construction timetables to be included.

DATE	COMMITMENT
July 1, 1989	Submittal to OCD of <sup>list</sup> listing and map of known plant sewer and drain lines carrying wastewater to treatment plant. Listing should include pipeline age, diameter and composition; and process sources to lines. OCD will require testing of wastewater lines for significant leaks, but will make decisions regarding test specifics after receiving sewer diagrams. <i>no map?</i>
Prior to Construction -	Submit detailed plans and specifications for pond expansion. State Engineer review also necessary if pond berm greater than 10 feet above grade, or if pond retains greater than 10 acre-feet. <i>OK</i>
Before DP Approval-	Commitment to construction of downgradient well at or near property boundary to ensure shallow and deep contamination does not exceed standards. Location and construction details to be jointly determined by OCD and Navajo. If new property boundary is in the south one-half of Section 12, an additional well will be required at the south end of Section 12. <i>OK</i>
Before DP Approval-	Submit decision made by EPA on pond closure. If EPA to supervise, submit copy of plans and closure schedule sent to EPA. If OCD supervised, submit schedule for activity including dates plans will be provided to OCD, and proposed schedule for earthwork. OCD will require dewatering of pond #1; removal of ditch material to pond; covering to prevent runoff, runoff, and to minimize infiltration; and protection from 100-year flood.
Before DP Approval-	Submit asphalt storage pit information and drawing including depth, area/volume, anticipated frequency of use, and commitment to notify OCD when used. <i>OK</i>
Before DP Renewal -	Hydrotest wastewater pipeline from treatment plant to ponds.

NAME

D. O. STEVENSON  
Joel Carson  
Henry Stern  
Matt Chiles  
David Griffin  
Charles Roybal  
William J. LeMay  
ROGER ANDERSON  
DAVID BOYER

ADDRESS

NAVAJO REFINING CO. - ARTESIA  
Losee & Carson P.A.  
Holly Corp. - Dallas  
NAVAJO  
Navajo  
Energy, Minerals & Natural Resources Dept  
" " OGD  
" " OGD  
" " "





STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

February 16, 1988

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David Griffin, Superintendent  
Environmental Affairs  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: Navajo Refinery Discharge Plan, GW-28

Dear Mr. Griffin:

In a letter dated January 11, 1988, Navajo requested an extension of time for discharge plan approval to allow for covenants/contractual arrangements to be made with neighboring landowners. The Oil Conservation Division (OCD) deferred action on this request until a meeting could be held with Navajo staff to explain the reason for the delays, and to estimate when such arrangements might be completed. This meeting was held February 11 at the OCD office in Santa Fe. During the meeting, Navajo explained the delays and committed to reporting progress on the arrangements if a further extension of time was granted.

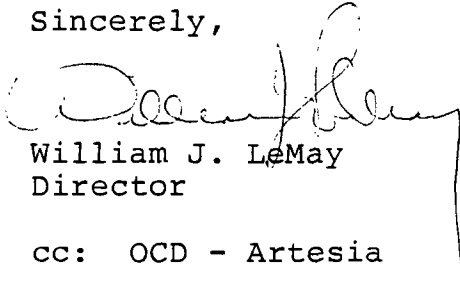
Pursuant to Water Quality Control Commission (WQCC) Regulation 3-106.A, Navajo Refining Company is hereby granted a 120-day extension, beginning January 16, 1988, and expiring May 16, 1988, to discharge without an approved discharge plan at its Artesia Refinery provided the following conditions are met:

1. By March 14, 1988, Navajo will provide a progress report on the status of the arrangements.
2. By April 11, 1988, Navajo will have finalized the contractual arrangements (except for final signing of documents), or will meet with OCD to propose alternative actions to be taken.
3. By May 16, 1988, Navajo is to have completed the contractual arrangements (including signing), or committed to alternative measures to assure compliance with WQCC Regulations.

Mr. David Griffin  
February 16, 1988  
Page 2

If there are any questions, please contact David Boyer of my staff at (505) 827-5812.

Sincerely,

A handwritten signature in cursive script, appearing to read "William J. LeMay". The signature is written in dark ink and is positioned above the printed name and title.

William J. LeMay  
Director

cc: OCD - Artesia



MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal

Time 3:15 PM

Date 2/1/88

Originating Party

Other Parties 748-3311

DAVID BOYER (OCD)

Zeke Sherman (w/Dave  
Griffin, Matt Clifton, Navajo)

Subject Navajo Refinery Discharge Plan

Discussion Called to notify Navajo that OCD decision on discharge plan extension (requested by Navajo in 1/11/88 letter) would be deferred until meeting with Navajo and OCD to discuss remaining issues, mainly drilling and water use covenants off property. Meeting would include Technical Staff and Lawyers plus management. OCD has prepared for working use an informal summary of remaining deficiencies in discharge plan.

Conclusions or Agreements Agreed to meet in next several weeks to discuss issues. OCD will send work sheets to Navajo; Navajo will call back suggesting meeting dates after review of work sheets.

Distribution

Navajo DP file  
Zeke Sherman

Signed

David H. Boyer



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

December 28, 1987

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David G. Griffin, Superintendent  
Environmental Affairs  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

RE: OCD Inspection and Sampling November 12, 1987 and Remaining  
Discharge Plan Issues.

Dear Mr. Griffin:

On November 12, 1987, Jami Bailey and myself met with you and Zeke Sherman to discuss discharge plan progress and to resample several of the monitor wells in the vicinity of the evaporation ponds. The purpose of this letter is to transmit those monitoring results, received December 18, and to discuss several observations made during the visit. It also outlines issues needing resolution prior to a decision being made on discharge plan approval.

On the three previous visits this year (4/28 - 5/1, 5/26, 8/12) OCD had inspected the facility and performed effluent and ground water monitoring. You were previously informed of the results of the inspections and sampling.

During the November 12 trip, we inquired about an oil pit at Tank 835 that OCD was not aware of previously. This pit is apparently a sludge pit used to drain tank bottoms from tank 835. The pit is unlined and has received an unknown volume of waste material from the tank which holds crude oil. As part of the pending discharge plan, Navajo must propose how it plans to clean out the pit, close it, and dispose of the excavated material. Also, Navajo must detail how it plans to handle such wastes in an environmentally sound manner in the future so that ground water contamination can be prevented. Further, it appears that in the past Tank 836, also a crude oil tank, has overflowed. Navajo also needs to submit information on how it proposes to prevent similar overflows at its tanks in the future.

Results of the sampling of the effluent as it discharges from the new pipeline show continued high levels of dissolved aromatic hydrocarbons. These levels are similar to what was found in OCD's 1984 sampling of the ditch at the Eagle Draw road crossing just North of the refinery. However, the turbidity and clarity of the effluent have been much improved with oil particles and emulsions greatly reduced. Because this oil material was deposited in Pond 1, now empty and available for leaching to ground water, I believe that the material was the major cause of the contamination we are seeing in the monitor wells. I expect the removal of the oily material from the waste stream and pond closure will alleviate that problem. The absence of oil will allow the remaining ponds to attenuate the dissolved hydrocarbons by evaporation and volatilization.

Navajo will need to sample and monitor the effluent and ponds to determine the fate of the dissolved hydrocarbons. Although I expect pond levels of aromatic hydrocarbons to be greatly reduced from the end-of-pipe numbers found during the November sampling, this monitoring is necessary to verify the attenuation and prevent high levels of dissolved hydrocarbons from entering the ground water system.

The results of August and November monitoring of the ground water at the ponds show hydrocarbon levels for benzene and PAH's exceeding standards at monitor well 4 (off-property). Non-hydrocarbon water quality at MW-4 is comparable to that at the pond windmill (900 feet west of MW4) currently used for stock watering. The November sample of windmill water had 2 ppb benzene, the first time hydrocarbons have been detected by OCD in that well.

As stated in previous conversations with you, OCD can not approve a ground water discharge plan if the method of discharge currently causes standards to be exceeded, or may cause a standard to be exceeded at a place of present or foreseeable future use of the water. We have discussed with you various regulatory options available, including establishment of a buffer zone by way of water well covenants such that the water can not be used as long as it remains contaminated in excess of standards. As part of such a covenant, Navajo will have to define the downgradient area where standards are not exceeded and monitor the ground water at that point to determine if there is any future violation of ground water standards. Based on OCD analyses performed to date, the pertinent state standards that are or may be violated are benzene, PAHS and fluoride.

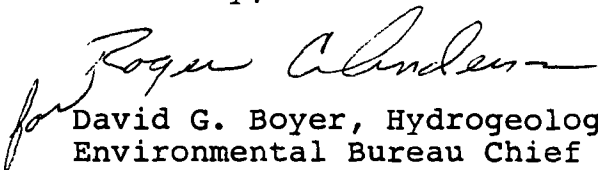
Mr. David G. Griffin  
December 28, 1987  
Page 3

Although the work performed by GCL was useful in indicating where high levels of hydrocarbons may be present, it can not be used by itself for a decision on where standards are no longer exceeded. This is because the sampling represented only a small zone (the top two feet) of the water table which is also impacted by evaporation and plant transpiration, and because many of the well points are no longer available for sampling. Permanent monitor wells completed at depths similar to the RCRA wells will be needed.

The issues presented in this letter and our previous letters of August 3 and August 27 constitute the remaining discharge plan's issues yet to be resolved. No further OCD inspections or monitoring will be performed prior to our completing review of the discharge plan. The discharge plan approval decision will be based on the material previously submitted, plus that requested in this and the August letters including any subsequent clarification needed. OCD still intends to prepare a draft summary of refinery commitments and monitoring after we receive responses to our letters.

If you have any questions on ground water issues, please contact me at 827-5812, or Roger Anderson at 827-5885 for engineering issues.

Sincerely,

  
for David G. Boyer, Hydrogeologist  
Environmental Bureau Chief

DGB:sl

Enc.

cc: OCD - District Office Artesia  
EID - Hazardous Waste Bureau

# ARTESIA DAILY PRESS

Covering The Heart Of Southeastern New Mexico's Growing Oil, Farm and Ranch En

VOLUME 34 — NUMBER 168

SUNDAY, DECEMBER 20, 1987

Published Sunday 1

## NAVAJO AND THE ENVIRONMENT

### Refinery conscious of air quality impact

**EDITOR'S NOTE** — This is the first of a two-part series on Navajo Refining Co. and the effects of its operations on the environment. The first part of the series deals with Navajo and Artesia's air quality.

By LYNN KOENIG  
News Editor

When one thinks of air quality in Artesia, one thinks of Navajo Refining Co., often a source of unpleasant odors in the community and occasionally a source of black smoke that under some weather conditions leaves a trail across the sky.

These obvious signs of the refinery's presence notwithstanding, Navajo operates in full compliance with state regulations and air quality standards. And odor problems in the city are usually associated with atmospheric conditions.

Kubia Clayton, chief of the state's Air Quality Bureau in Santa Fe, gives Navajo Refining Co. a clean slate under state Air Quality Standards and National Ambient Air Standards. The refinery must operate in compliance with both sets of rules.

"The Air Quality Bureau has no evidence at all that there are harmful emissions at the Navajo Refinery," Clayton said by telephone from Santa Fe.

"Navajo complies with all state regulations," Clayton said. "Regarding potentially harmful emissions, we don't have any evidence that would say so at this time. Based on what we know, there is no problem there."

"In fact, they have spent a lot of money. You're lucky to have a company like Navajo."

Company officials say emissions by the refinery are primarily steam or inert chemical compounds in harmless quantities.

In other words, they "look" or appear or smell worse than they really are.

Refinery emissions include the black plume of smoke from the flare of the refinery's Fluidized Catalytic Converter Unit, the most visible of all emissions; a small amount of catalyst, a white powdery inert substance, from the FCC unit; and steam, easily visible in cold weather from the tall Thermoform Catalytic

Cracker Structure that sits next to U.S. 82 and from other stacks in that area.

"When we are flaring, we are in trouble. We say we are burning money and we try to keep it to a minimum," Dewie Stevenson, vice president of refining, said. "Flaring" takes place during a condition called an "upset."

An upset occurs, he said, when a unit over-pressures, sending hydrocarbons through a piped system leading up to the lighted flare where they are burned before entering the atmosphere as inert or less harmful substances.

"If it's a big flare, it's usually because of a power failure or a loss of the compressor," Stevenson said.

Ninety-eight percent of the time, he noted, the upset and subsequent flaring is caused by a power failure over which refinery personnel have no control.

This past week, during freezing temperatures, a relief valve failed to reseal, causing gases to escape into the flare until the refinery's FCC Unit could be shut down and the failing valve replaced.

David G. Griffin, Navajo superintendent of environmental affairs and quality control, said that whenever the flare burns for over six hours, the refinery must report it to the state. He made his report by telephone Tuesday.

"If it burns a few minutes, the state doesn't consider it significant enough to report," Griffin said. "A full power failure, causing failure to the primary unit of the cat cracker (FCC) and restart of that unit, requires a Form 801."

In making his report, Griffin gave the time the flaring began, source of the problem, the cause of the problem, estimated duration of the burning and steps being taken to correct the problem.

"You are going on record for information (the state can) give to the public if anyone should call and ask," Griffin said.

The form itself is filed after the incident has occurred.

The actual burning leaves no odors, Stevenson said. The carbon contained in hydrocarbons being burned produces the black smoke.



The Thermoform Catalytic Cracker structure at Navajo Refinery, adjacent to U.S. 82, is almost hidden by steam produced by units in this area.

Carbon itself is an inert substance.

When a second and smaller flare on the south end of the refinery is burning, it can mean refinery personnel are bleeding down a tank to work on it or bleeding down a pump, Stevenson said. The compounds contained in the units or pumps are emptied to the flare before work in the unit begins.

"These are minor and are not even reported," Stevenson said.

The FCC flare, which is visible on the skyline of the refinery, really acts as a huge natural gas pilot light, and the refinery purchases natural gas to keep it burning. It is a safety device, Griffin said.

"Relief valves and safety devices throughout the refinery are piped into the flare," Griffin said. "When something occurs, that gas rushes up to be burned off, rather than being released in the unit. It is one of the most visible things people see."

The flare protects residents from emissions of more harmful substan-

ces — the hydrocarbons or chemicals in their original forms — and the unit protects employees from injury through damage or explosion of a unit.

When the amine unit, which absorbs hydrogen sulfide, is in upset or is being burned off to allow maintenance, the state also must be notified.

"Concentrates of hydrogen sulfide that would have gone into the atmosphere are burned in our furnaces and boilers, burned along with the fuel gas that we produce," Griffin said.

"Hydrogen sulfide is not released as hydrogen sulfide but as sulfur dioxide, which can be similar in smell, but is much, much, much less toxic," he said.

Air monitors have been placed across the street from the refinery on J.B. "Buster" Mulcock's farm, and in all these years, the two said, refin-

Please see page 8

# Refinery

Continued from page 1

ery personnel have never been notified of an air quality violation.

"It's around-the-clock monitoring," Griffin said. "The way we look at it, if we were doing something wrong, we would hear about it."

Under National Ambient Air Standards, there is a standard for particulates, dust and any visible smoke. These apply primarily to the stack of the Fluidized Catalytic Cracker Unit.

Catalyst material is emitted in the refining process, and its plume can be seen depending on how overcast or dark the sky is. The state emission limit is one ton of catalyst per day.

"We run one-fourth to one-third a ton per day," Griffin said.

The material called catalyst dust is basically clay.

"It's modified slightly in its structure but it's basically Georgia clay," Stevenson said. "Chemically, it's the same as dust that blows around here every spring. It comes out all the time. People can see it. But essentially it's clay and fairly inert."

Griffin said pollution control equipment installed on the stack catches about 70 percent of the material. High-efficiency cyclones direct the air in circles, using centrifugal force. Force of the air causes the material to stay in the vessel, while the air passes out.

Tests performed on the material show it is not hazardous, Griffin said.

The material captured by the pollution control equipment is removed

from the unit and delivered to the city landfill so it can be covered every day.

"It would do us no good to catch it if we weren't going to do something with it," Griffin said. "If it's left uncovered, the wind could pick it up and blow it back into the atmosphere."

When a plume appears to be white, it is usually steam or water vapor. Steam can be seen at the top of the TCC structure, which bears the red Christmas star next to U.S. 82. Steam is released when too much pressure builds up. It also rises from equipment in that area where crude oil is cooled with water.

The refinery produces about 200,000 pounds of steam per hour. It is used to power pumps and to heat and boil oil, and it even snuffs flames in furnaces in emergency situations.

The odor most Artesians are familiar with is the smell of sulfur from sour crude oil produced in this area. It occurs in quantity of one weight percent, meaning that for every 100 tons of sour crude, one ton will be sulfur.

Sources of crude vary dramatically, yielding anything from almost sulfur-free crude to crude of 10 to 15 weight percent sulfur. But when mixed all together, Stevenson said, crude oil refined by Navajo averages out right about one weight percent.

"We spend a lot of money to get that out," he said.

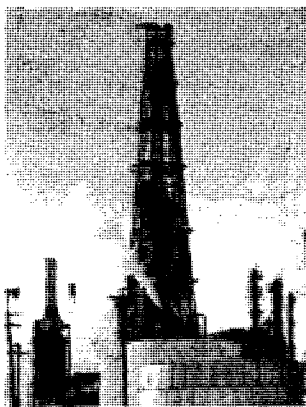
Sulfur must be removed to meet specifications for gasoline, diesel fuel, jet fuel and LP gas. Only in asphalt is sulfur not removed.

The task of removing sulfur is accomplished by adding hydro-desulfurizers. Hydrogen chemically breaks the bond the sulfur has formed with the oil, Griffin said.

A by-product of this process is hydrogen sulfide, which has an odor resembling rotten eggs when in high enough concentrations. This gas is concentrated in Navajo's amine unit and then pipelined to Kerley Agriculture Products, which sits next to the refinery on North Freeman Avenue.

Kerley officials declined to be interviewed for this article.

Kerley produces sodium hydrosulfide used in the copper industry and ammonium hydrosulfide, a fertilizer additive. The company operating under normal conditions should not



have any air emissions, Stevenson and Griffin said. As a safety device, its plant also is piped into Navajo's flare.

Both Navajo officials can recount the occasions when the refinery has received unjustified blame for odor problems in Artesia.

"We have gotten calls from people blaming us when the wind was blowing from the southwest part of town and the sour wells in the county,"

Stevenson said. "Spherical conditions cause the odor to be most noticeable then."

"There's an inversion in the atmosphere," Stevenson said.

Griffin agreed.

"Due to atmospheric conditions, any odor from any source surrounding us will settle down near the ground before the wind starts blowing and moving it up and dispersing it," Griffin said.

"The most important thing that the public needs to understand is that (the source of any odors) is not in concentrations that are harmful," Griffin said. "The sulfur that we have around here is 1,000 times less than what is harmful."

The presence of an odor has little relationship with a substance's harmfulness. Some deadly chemicals have no detectable odor at all.

It is not true, the two said, that the refinery waits until nightfall before burning harmful gases.

"This refinery does nothing unusual at night," Griffin said. "We operate 24 hours a day, round-the-clock. What you smell in the morning is due to atmospheric conditions. Most of these gases are generally heavier than air and they don't rise very well. If you let the atmosphere get still, it will be more noticeable."

Sub-zero temperatures last week combined with nine inches of snow on the ground and cloud cover in early morning provided ideal conditions for an atmospheric inversion.

Also regulated by the state is the storage of fuel and other products.

Storage tanks with floating roofs contain special rubber gaskets that seal against the walls of the tank so

that nothing in the tank can evaporate into the atmosphere. Crude oil is stored in such tanks.

"First off, we don't want a bunch of hydrocarbons released to the atmosphere," Griffin said. "Secondly, we're not evaporating 60-cents-per-gallon-for-gas per day."

For tanks with stationary roofs, internal floating roofs are used. These are used to store gasoline and jet fuel.

Anything more volatile than that is stored in completely sealed tanks. Butane is stored in spherical tanks, while propane is stored in bullet-type tanks.

Griffin said refinery officials attempt to cooperate as much as possible with city residents and attempt to solve any problems.

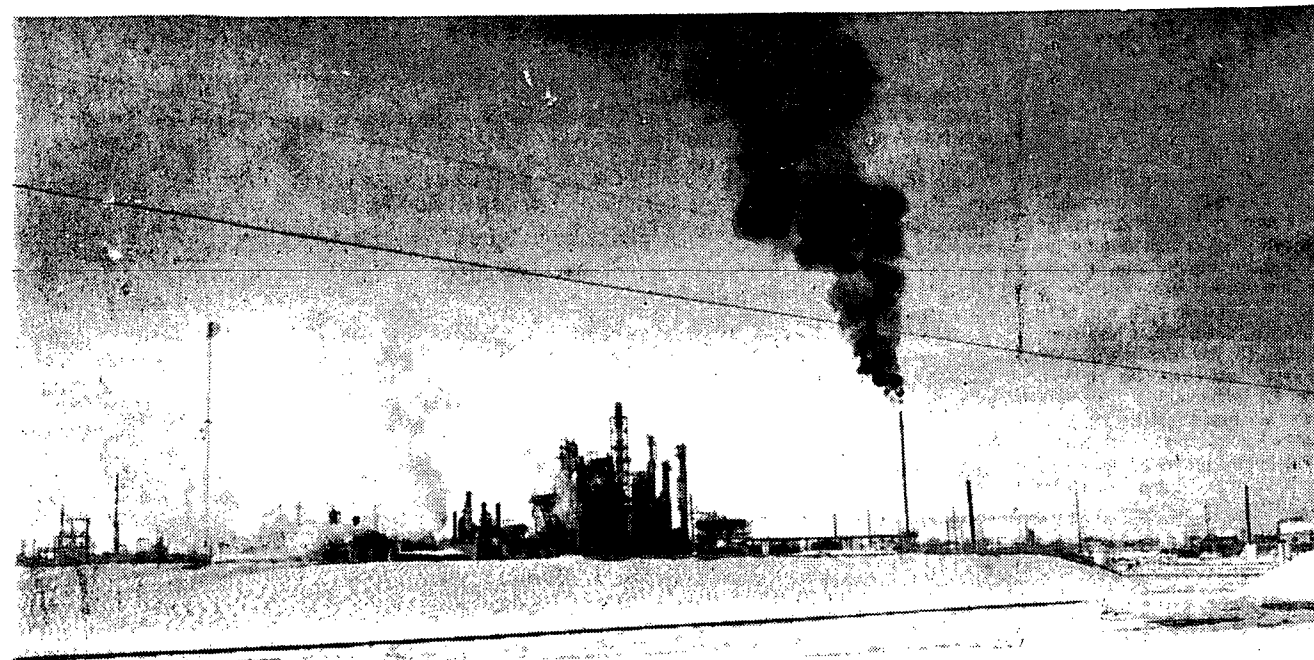
"When we get a call from a local resident about a problem, we go investigate it. If we can determine the problem, we certainly do that," Griffin said. "Most of the time, however, we cannot make such a nice, clean determination."

"Generally, we have tried to be as good a neighbor as we can. We all live in the same community. The last thing we want to do is poison our kids and families," Griffin said.



David G. Griffin





Effects of cold weather have caused the burning of the flare at the Fluidized Catalytic Cracker Unit

## Setting rumors straight

Over the years, the Navajo refinery has been the subject of much misinformation. For example, the newspaper in Roswell blamed an odor in that city on the Artesia refinery 45 miles away.

The many rumors about the refinery have little foundation in truth, Navajo officials told the Artesia Daily Press.

Below are a few "rumors" that have been related to the Daily Press and the facts about the situation:

- "Navajo burns off 'bad' batches." Navajo officials said there are no "bad batches." They pointed out that any compound can be blended to achieve the desired product in the end.

- "Navajo burns off harmful chemicals at night. That's why we smell it so bad in the mornings." Navajo officials said nothing unusual occurs at night. The refinery is in constant 24-hour operation. Only in case of an "upset" at night will the flare be burning. The noticeable morning odor is caused by an inversion of the atmosphere, which holds the heavier compounds closer to the ground. When the air warms up during the daytime, the compounds are dispersed.

- "All that heavy black smoke can't be good for us." The black smoke from the flare is caused by carbon, an inert substance, contained in hydrocarbons being burned. Once the original compounds are burned, the substances remaining are low in toxicity and in quantities far below toxic levels, such as 1,000 times less than harmful levels.

- "Navajo receives wastes from other plants, which it burns at night." Holly Corp. only owns two refineries — one here and one in Montana. It receives no waste products from other companies, which would be illegal, and, as stated above, it burns nothing at night under normal operating conditions.

- "Navajo doesn't care about the safety levels of its emissions." Company officials say they do care about the safety level of emissions — after all they work there, closer to the so-called harmful emissions than the average resident. They and their families live in Artesia, subject to the same air quality as the rest of us. "The last thing we want to do is poison our kids and families," one official said.

- "Navajo does something out there that causes power failures." Actually, the plume of dense black smoke that can be seen following a power failure is the result of an "upset" caused by the power failure, over which the refinery and its employees have no control. In other words, first the power failure, then the black smoke and not the other way around.



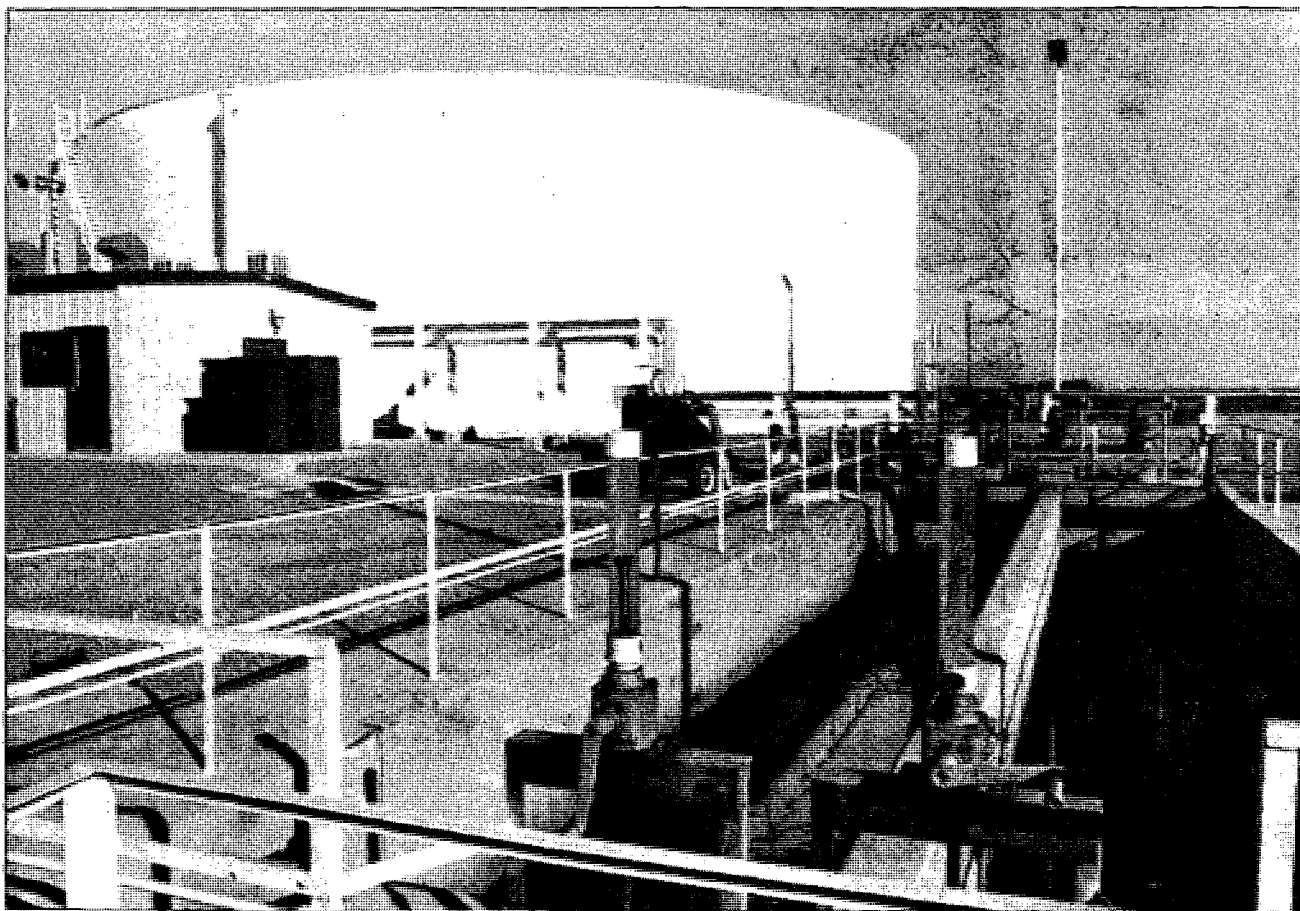
# ARTESIA DAILY

*Covering The Heart Of Southeastern New Mexico's Growth*

VOLUME 34 — NUMBER 169

MONDAY, DECEMBER 21, 1987

Published Sun



A 55,000-barrel tank looms behind an API separator unit at Navajo Refining Co. Both are links in a \$1.8 million wastewater treatment project that went on line last month. The

system treats 600,000 to 800,000 gallons of water per day.

## NAVAJO AND THE ENVIRONMENT

# New plant helps waste disposal

...the unit that is the heart of the system, says Navajo

## NAVAJO AND THE ENVIRONMENT

# New plant helps waste disposal

**EDITOR'S NOTE** — This is the second of a two-part series on Navajo Refining Co. and the effects of its operations on the environment. Today's segment deals with Navajo and groundwater quality.

**By TIM PALMER**  
Daily Press Editor

**OIL AND WATER DON'T MIX**  
but it would be impossible to refine oil without a whole lot of water.

Artesia's Navajo Refining Co. uses more than a million gallons of water a day, mostly as a coolant. Processes that turn crude oil into products such as gasoline, diesel, jet fuel, propane and butane involve temperatures that can reach 1,000 degrees Fahrenheit.

Though some water evaporates or leaves the refinery as steam, 600,000 to 800,000 gallons a day leaves as wastewater. That amount roughly equals the amount of wastewater generated in a day by the entire city.

To ensure that its wastewater does not pollute groundwater below or around the refinery on the eastern edge of the city, Navajo recently spent nearly \$2 million.

The wastewater project, which went on line in early November, consists of a treatment plant and a four-mile pipeline to two evaporation ponds east of the refinery.

Wastewater now is much cleaner when it leaves the refinery, and it travels to the ponds underground instead of in an open ditch. A third, westernmost pond that the ditch formerly emptied into has been closed.

Navajo is answerable to two state agencies and the federal government on the potential impacts of its operations on groundwater. Navajo vice

president of refining Dewie Stevenson summed up the regulators' role.

"They want to make sure that our effluent water doesn't bother any aquifer," he said.

**BEFORE THE NEW TREATMENT PLANT** was commissioned, Navajo's wastewater went into two API separators — chambers in which lighter-than-water material rises to the top and is skimmed and heavier material sinks to the bottom and is pumped out as sludge.

Remaining wastewater then traveled four miles by ditch to the evaporation ponds just west of the Pecos River, where the disposal process was completed by evaporation.

The oily waste was taken to the refinery's land farm, where microorganisms in the soil could break it down and dispose of it into the air. The land farm remains an integral part of Navajo's waste disposal system.

Now wastewater goes from the two separators to a third API separator at the new plant, which provides an additional step in treatment by gravity separation. But what happens to the wastewater after it leaves the third separator represents the major improvement in the new system over the old.

Water is pumped from the separator to a two-million-gallon holding tank. After it leaves the tank by pipeline, glue-like polymers — substances that cause solid particles to cling together — are added.

Wastewater then is gently stirred in a unit called a flocculator, which allows the polymers to perform their function of causing tiny particles such as oil, dust and flecks of rust to bunch up.

From there wastewater goes into

the unit that is the heart of the system — a dissolved air filtration (DAF) tank. There, air injected into the water provides bubbles for the solids to cling onto and ride to the surface.

Solids are skimmed off, pumped to storage tanks and eventually land-farmed. The remaining water, which by then is clear, makes the trip via pipeline to the evaporation ponds.

David Griffin, superintendent of environmental affairs and quality control at Navajo, regrets that the wastewater's final disposal is into the atmosphere.

"Believe me, we have tried our best to find a good use for it," he said. Navajo consulted with the New Mexico State University Agricultural Science Center, but to no avail.

"The water here is finally just too salty to be used," Griffin said. He likened the mineral-heavy wastewater to ocean water as far as its usefulness to farmers.

**NEW MEXICO OIL CONSERVATION DIVISION** environmental bureau chief David Boyer said Navajo's wastewater project took care of two problem areas — the open ditch and the first evaporation pond.

"The pond that all that nasty stuff went into has been closed," he said.

Indeed, the now mostly dry pond has a black bottom, and partly blackened bales of straw lie near its edge. Tires stand half-buried in a row along the bank. Navajo environmentalist Zeke Sherman said the tires were intended to keep wave action from eroding the dike between the first and second ponds.

"This day and age you would never do anything like this," Sherman noted.

The fact that oil refining has been

going on at what is now Navajo Refining Co. for more than 60 years has made the job of bringing the refinery in line with today's environmental standards more difficult.

"We're trying to implement new regulations in an old site," said C. Kelley Crossman of the state Environmental Improvement Division. Crossman, environmental supervisor for EID's Hazardous Waste Management Bureau, pointed out that as hazardous waste detection technology has improved, standards have gotten tougher.

"The goal is to have no release whatsoever," he said.

Crossman acknowledged the difficulty of undoing the past, but one Navajo program — hydrocarbon recovery — does just that.

The ground beneath the refinery contains pockets of refined product — much of it from leaks in underground metal pipelines no longer in use.

"Some of it's gasoline, some of it's diesel, some of it's heavier fuels," Stevenson said. In the old days, he pointed out, leaks were not of particular concern.

"Oil was two dollars a barrel or something like that and it just wasn't that big a deal," Stevenson said. With increased environmental consciousness, higher oil prices and new technology, recovery of the leaked product became feasible. Stevenson said Navajo has sunk 60 to 70 test wells and five or six are pumping product at a given time.

The wells make the Navajo property, in effect, a producing oil field. Recovered hydrocarbons are recycled.

"It pays for itself," Stevenson said. The existence of the fuels in the

(Please See NEW, Page 2)

# new

(Continued From Page 1)

ground does not represent a violation of environmental standards, and OCD's Boyer gave Navajo credit for its voluntary recovery program.

The underground product does not represent a threat to groundwater because of an artesian effect below the refinery, Stevenson said. A 20-foot test water well will back up 8 to 9 feet because of pressure from below. The artesian effect keeps anything from working its way downward into an aquifer.

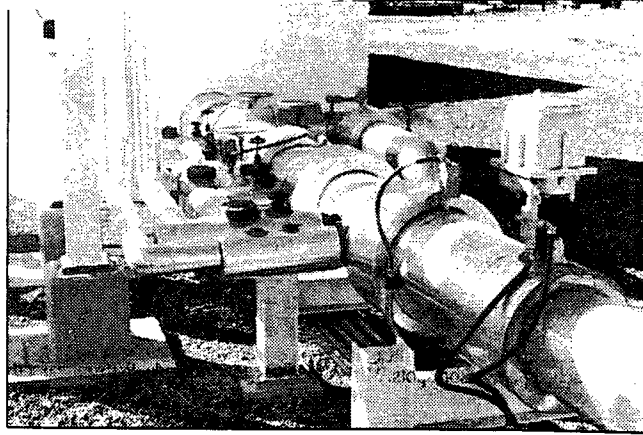
Griffin said 90 percent of the refinery's underground pipelines have been taken out of use.

**THOUGH THE NEW WASTEWATER** treatment project is complete and on line, Navajo's dealings with the two state agencies that watchdog it continue. EID monitors the refinery's compliance with the federal Resource Conservation and Recovery Act (RCRA) on behalf of the federal Environmental Protection Agency.

OCD monitors compliance with state Water Quality Control Commission standards on behalf of the state Environmental Improvement Board.

Both agencies are in the process of completing work on operating permits for Navajo. Crossman said EID expects to issue a RCRA permit around Feb. 1. OCD is nearly as far along on an Approved Groundwater Discharge Plan. Boyer said the discharge plan should be finalized by the end of March.

At this point, OCD is mainly concerned with what Boyer called "housekeeping requirements." Those include replacement or repair of certain older tanks that are leaking, along with dikes and curbing to prevent puddling and to direct was-



Polymers, glue-like substances that allow solids in refinery wastewater to bunch up, are added to the wastewater stream through the smaller pipes at left.

tewater into the new treatment system.

EID did a detailed groundwater inspection at Navajo in mid-November, Crossman said. The inspection turned up a few relatively minor discrepancies, including the frequency of monitoring an old tetra-ethyl lead sludge disposal, but nothing that cannot be corrected easily.

"Generally they're doing all right," Crossman said. The November inspection was a follow-up to an annual operations and administrative inspection done in June. Crossman said the June visit turned up no major problems.

**THE ENVIRONMENTALISTS AND NAVAJO** management often find themselves at cross purposes.

"We're aware that these things the law requires cost money," Crossman said. However, EPA and EID have been directed by Congress not to consider money when enforcing environmental standards.

Stevenson said the Oil Conservation Division had not concurred

with the company's determination — made after hundreds of thousands of dollars in testing costs — that nothing hazardous had leaked from the open ditch or the evaporation ponds. EID had detected what Stevenson believes is decades-old chrome deep below the first pond, and that made the pond a hazardous waste area by definition.

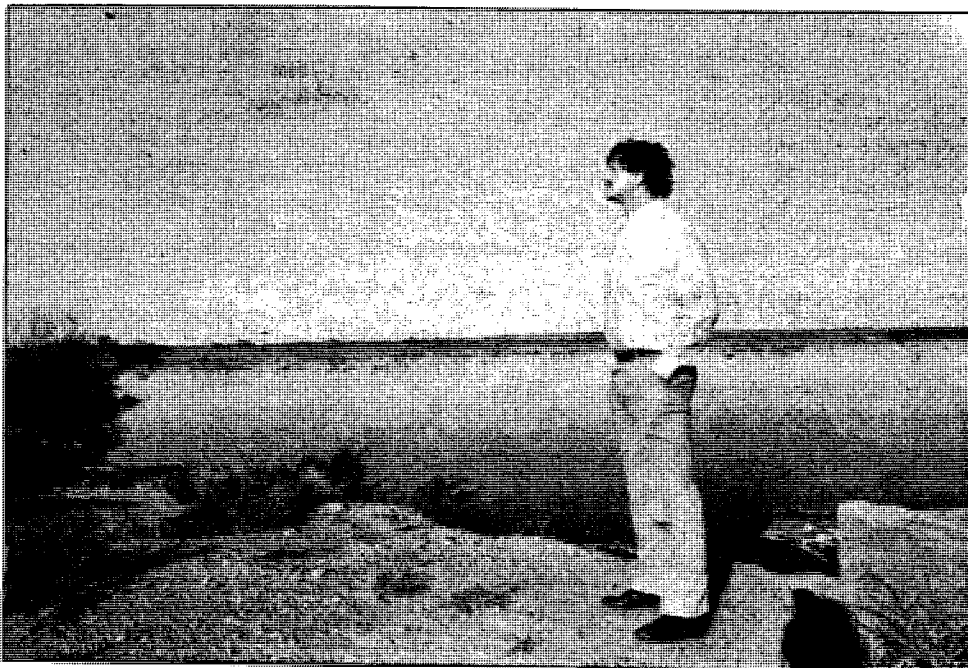
Navajo eventually agreed to abandon the ditch and the pond.

"We decided for the best overall relationship we'd go ahead and pipe it down there anyway, so we know nothing can get out," Stevenson said.

The decision made OCD happy.

"In every way the new situation is a great improvement," Boyer said.

The new \$1.8 million wastewater project is complete, but Navajo's overall efforts to ensure that its operations do not harm Artesia's air or groundwater continue. Griffin estimated the company's annual environmental protection costs at \$1 million.



Navajo environmentalist Zeke Sherman stands at the edge of one of two evaporation

ponds four miles east of the refinery as treated wastewater empties behind him.



Vice president of refining Dewie Stevenson stands at the gate of Navajo's land farm, where most hazardous waste generated by the refinery is disposed.

## Most solid wastes go to land farm

By TIM PALMER  
Daily Press Editor

Almost all waste generated by Navajo Refining Co. that falls under the definition "hazardous" is disposed of with the help of microorganisms that occur naturally in the soil. The waste goes to the refinery's land farm.

"It acts very similarly to a compost pile," state environmentalist C. Kelley Crossman explained. Separator sludge, tank bottom sludge, heat exchanger bundle cleaning sludge and dissolved air flotation scum — all Environmental Protection Agency "listed" wastes — are spread on the four-

acre land farm, dished, fertilized and aerated.

"In effect they're growing the microorganisms on this oily waste," Crossman said. When the helpful organisms eat the waste, they reduce it to such innocuous substances as carbon dioxide, water and some methane.

Navajo uses low-level chrome, a corrosion inhibitor, in three of its five cooling towers. That winds up on the land farm as well, after settling in the three API separators. Two catalysts used to separate sulfur from crude oil, cobalt molybdenum and nickel molybde-

num, are collected in metal reclaimers and sent back to the catalyst manufacturer, as is platinum catalyst.

Waste acid and waste caustic are neutralized and leave the refinery as wastewater.

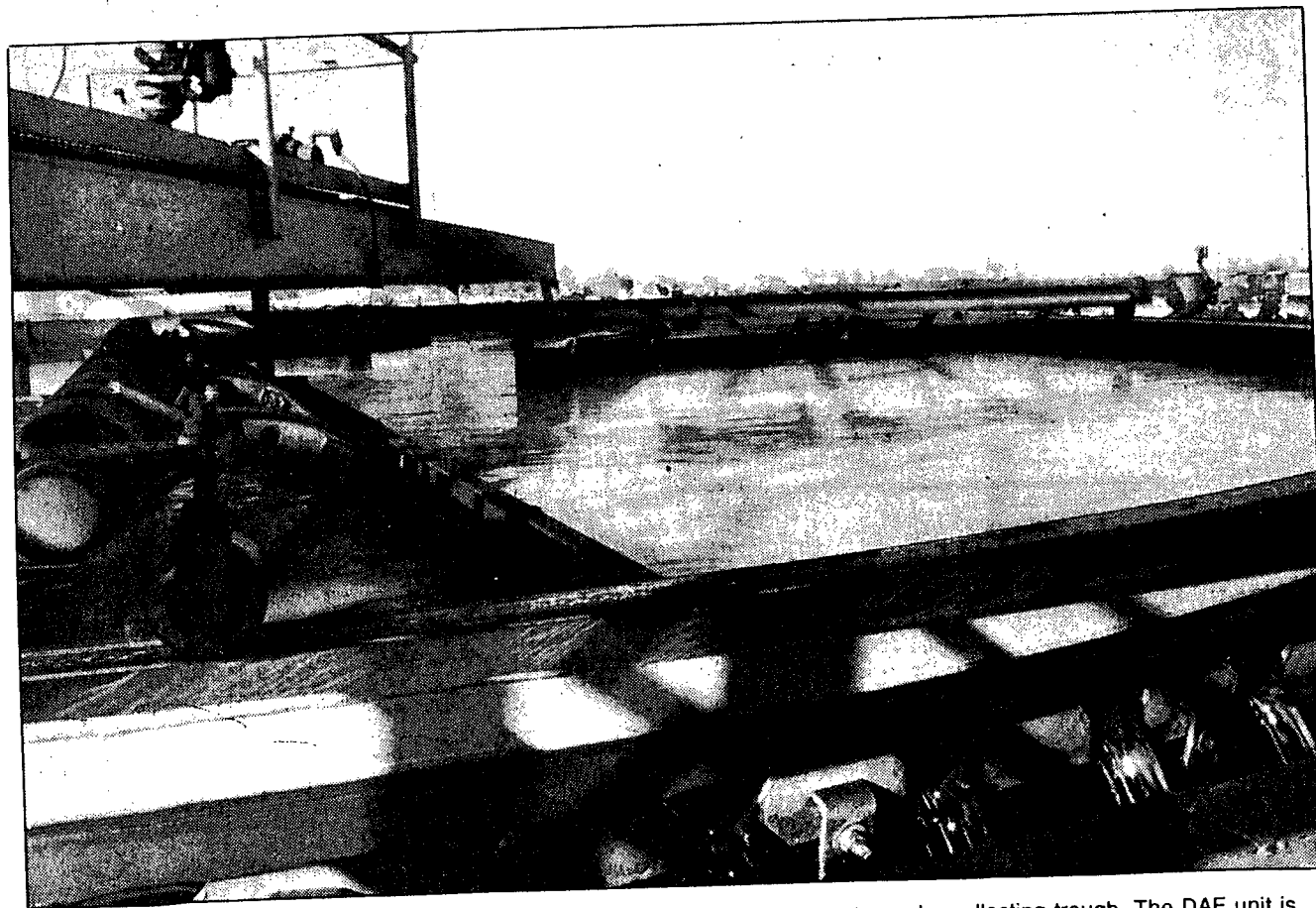
"We have ourselves set up well to handle our own waste," Navajo environmentalist David Griffin said.

He pointed out that crude oil refining employs fairly basic processes that do not generate the toxic wastes associated with petrochemical industries such as plastics and pesticides.



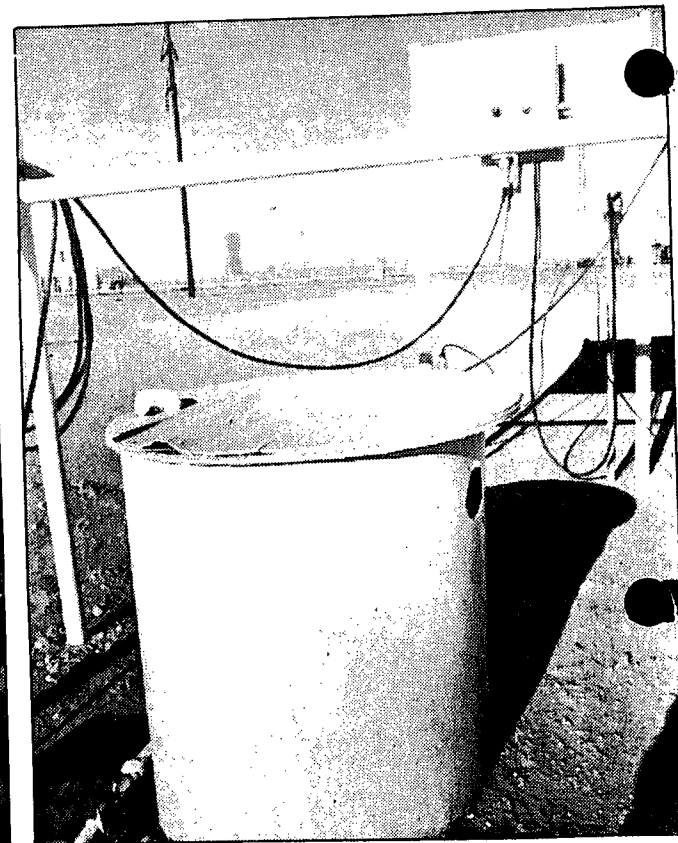
This now-abandoned ditch carried Navajo Refining Co. wastewater for decades until it was closed last month. Wastewater now trav-

els by underground pipeline the four miles to its destination — evaporation ponds east of the refinery.



Clear water flows through a weir of the dissolved air flotation unit at Navajo Refining Co. as a skimmer pushes solids

on the surface toward a collecting trough. The DAF unit is the heart of Navajo's new wastewater treatment plant.



A hydrocarbon sensor-equipped well pumps leaked petroleum product from the ground beneath the Navajo refinery. Dozens of similar wells are in place to recover fuel that has leaked and gathered in pockets.

## Refinery waste disposal takes step into future



# Affidavit of Publication

Copy of Publication

No. 12112

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of

the State of New Mexico for 1 days consecutive weeks on the same day as follows:

First Publication October 2, 1987

Second Publication

Third Publication

Fourth Publication

and that payment therefore in the amount of \$ has been made.

Subscribed and sworn to before me this 6th day of October, 1987.

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1991

## LEGAL NOTICE

### NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plans and discharge plan modification have been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-28) Navajo Refining Company, David Griffin, Environmental Affairs Superintendent, P.O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a ground water discharge plan for its refining facility located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/water separator and a newly con-

structed waste water treatment plant prior to disposal in 1 acres of evaporation ponds located three miles east of the refinery adjacent to the Pecos River. The refinery effluent has a total dissolved solid content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 1 foot and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

(GW-43) Petro-Thermo Corporation, Robert W. Abbott, Manager of Operations, P.O. Box 2069, Hobbs, New Mexico 88241-2069, has submitted for approval a ground water discharge plan for its proposed trucking facility located in the SW/4 NW/4, Section 28, Township 18 South, Range 38 East, (NMPM), Lea County, New Mexico. Approximately 500 gallons per day of residual tank truck (produced water and brines) fluids and wash water will be generated and disposal of in an OCD approved Class II disposal well. The discharge plan addresses how spills, leaks and other accidental discharges to ground water will be managed. Ground water most likely to be affected by any discharge at the surface is at a depth of approximately 65 feet with a total dissolved solids concentration of approximately 500 mg/l.

(GW-44) Phillips 66 Natural Gas Company, Michael D. Ford, Environmental Analyst, 4001 Penbrook, Odessa, Texas 79762, has submitted for approval a ground water discharge plan for its Hobbs Booster Station located in the NW/4 of Section 4, Township 19 South, Range 38 East, NMPM, Lea County, New Mexico. Approximately 386 barrels of cooling tower blowdown will be disposed of in the City of Hobbs sewer system. Waste water from the treater operations will be disposed of into an OCD approved contract Class II disposal well. The discharge plan addresses how spills, leaks and other accidental discharges to ground water will be managed. Ground water most likely to be affected by any discharge at the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 500 mg/l.

(GW-33) El Paso Natural Gas Company, San Juan Gas Processing Plant, John Craig, Vice President, P.O. Box 4990, Farmington, New Mexico 87499, has submitted an application for modification of its previously approved discharge plan for the contact process waste water at its facility located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico. El Paso Natural Gas Company proposes to dispose an additional 6480 gallons per day of waste water with a total dissolved solids concentration of approximately 12,000 mg/l in their double-lined waste water evaporation pond equipped with leak detection. The 6480 gallons per day of waste water will be generated at the softener and de-alkalizer regeneration units and will be in addition to the 4000 gallons per day of waste water approved in the original discharge plan. The dimensions of the pond will be adjusted accordingly to allow for the increased volumes. The ground water most likely to be affected by any discharge to the surface is at a

depth ranging from 15 feet to 110 feet, with a total dissolved solids concentration of 17,500 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of September, 1987. To be published on or before September 5, 1987.

STATE OF NEW MEXICO  
OIL CONSERVATION  
DIVISION

WILLIAM J. LEMAY  
published in the Artesia Daily  
Press, Artesia, N.M., Oct. 2,  
1987.

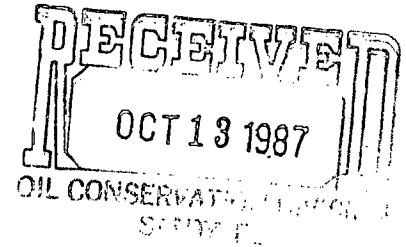
Legal No. 12112





**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE**

Ecological Services  
Suite D, 3530 Pan American Highway NE  
Albuquerque, New Mexico 87107



October 9, 1987

William J. Lemay, Director  
State of New Mexico Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501

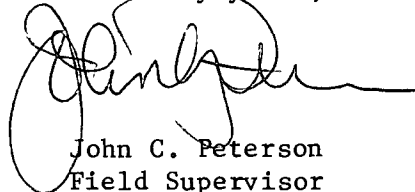
Dear Mr. Lemay:

This letter concerns the Notice of Publication of discharge plans for the Navajo Refining Company, Petro-Thermo Corporation, Phillips 66 Natural Gas Company and El Paso Natural Gas Company. The Navajo Refining Company facility is located in the SE 1/4 of Section 1, E 1/2 of Section 8, W 1/2 of Section 9 and N 1/2 of Section 12, T17S, R26E, (NMPM), Eddy County, New Mexico. The Petro-Thermo Corporation facility is located in the SW1/4 NW1/4, Section 28, T18S, R38E, (NMPM), Lea County, New Mexico. The Phillips 66 Natural Gas Company is located in the NW 1/4 of Section 4 T19S, R38E, (NMPM), Lea County, New Mexico and the El Paso Natural Gas Company is located in Section 1, T29N, R15W, (NMPM), San Juan County, New Mexico. The Discharge plans address the means by which spills, leaks and other discharges to ground water at the plant sites and the pond areas will be managed.

We have reviewed the discharge permits and find that there are no issues of concern to resources under our jurisdiction. Therefore, we have no objection to the discharge plans.

Thank you for the opportunity to comment on the discharge plans. If you have any additional information please contact Tom O'Brien at (505) 883-7877 or FTS 474-7877.

Sincerely yours,



John C. Peterson  
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico  
Director, New Mexico Health and Environment Department, Environmental  
Improvement Division, Santa Fe, New Mexico  
Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife  
Enhancement, Albuquerque, New Mexico

# AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, \_\_\_\_\_

Mark C. Keeling

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of \_\_\_\_\_

One weeks.

Beginning with the issue dated

October 1, 19 87

and ending with the issue dated

October 1, 19 87

Business Manager

Sworn and subscribed to before

me this 1 day of

October, 19 87

Vera Murphy  
Notary Public.

My Commission expires \_\_\_\_\_

Nov. 14, 19 88

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

## LEGAL NOTICE October 1, 1987 NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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(GW-28) Navajo Refining Company, David Griffin, Environmental Affairs Superintendent, P.O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a ground water discharge plan for its refining facility located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/water separator and a newly constructed waste water treatment plant prior to disposal in 85 acres of evaporation ponds located three miles east of the refinery adjacent to the Pecos River. The refinery effluent has a total dissolved solids content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 15 feet and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

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If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of September, 1987. To be published on or before September 25, 1987.

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION  
WILLIAM J.  
LEMAY,  
Director  
(Seal)

RECEIVED  
OCT 23 1987

GROUND WATER/HAZARDOUS WASTE  
BUREAU

OCT 28 1987

OIL CONSERVATION DIVISION  
SANTA FE

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plans and discharge plan modification have been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P. O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-28) Navajo Refining Company, David Griffin, Environmental Affairs Superintendent, P. O. Drawer 159, Artesia, New Mexico 88210, has submitted for approval a ground water discharge plan for its refining facility located in the SE/4 Section 1, E/2 Section 8, W/2 Section 9 and N/2 Section 12, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 405,200 gallons per day of refinery waste water will be processed through an oil/water separator and a newly constructed waste water treatment plant prior to disposal in 85 acres of evaporation ponds located three miles east of the refinery adjacent to the Pecos River. The refinery effluent has a total dissolved solids content of 2000 to 4000 mg/l. Ground water most likely to be affected by any discharge at the surface in the refinery area is at a depth of about 15 feet and has a total dissolved solids concentration of approximately 2500 mg/l, and in the pond area ground water is at a depth of 5 to 10 feet and has a total dissolved solids content ranging between 6,000 and 27,000 mg/l. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site and the pond area will be managed.

(GW-43) Petro-Thermo Corporation, Robert W. Abbott, Manager of Operations, P. O. Box 2069, Hobbs, New Mexico 88241-2069, has submitted for approval a ground water discharge plan for its proposed trucking facility located in the SW/4 NW/4, Section 28, Township 18 South, Range 38 East, (NMPM), Lea County, New Mexico. Approximately 500 gallons per day of residual tank truck (produced water and brines) fluids and wash water will be generated and disposed of in an OCD approved Class II disposal well. The discharge plan addresses how spills, leaks and other accidental discharges to ground water will be managed. Ground water most likely to be affected by any discharge at the surface is at a depth of approximately 65 feet with a

PUBLIC NOTICE

10-2-87

total dissolved solids concentration of approximately 500 mg/l.

(GW-44) Phillips 66 Natural Gas Company, Michael D. Ford, Environmental Analyst, 4001 Penbrook, Odessa, Texas 79762, has submitted for approval a ground water discharge plan for its Hobbs Booster Station located in the NW/4 of Section 4, Township 19 South, Range 38 East, NMPM, Lea County, New Mexico. Approximately 386 barrels of cooling tower blowdown will be disposed of in the City of Hobbs sewer system. Waste water from the treater operations will be disposed of into an OCD approved contract Class II disposal well. The discharge plan addresses how spills, leaks and other accidental discharges to ground water will be managed. Ground water most likely to be affected by any discharge at the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 500 mg/l.

(GW-33) El Paso Natural Gas Company, San Juan Gas Processing Plant, John Craig, Vice President, P. O. Box 4990, Farmington, New Mexico, 87499, has submitted an application for modification of its previously approved discharge plan for the contact process waste water at its facility located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico. El Paso Natural Gas Company proposes to dispose an additional 6480 gallons per day of waste water with a total dissolved solids concentration of approximately 12000 mg/l in their double-lined waste water evaporation pond equipped with leak detection. The 6480 gallons per day of waste water will be generated at the softener and de-alkalyzer regeneration units and will be in addition to the 4000 gallons per day of waste water approved in the original discharge plan. The dimensions of the pond will be adjusted accordingly to allow for the increased volumes. The ground water most likely to be affected by any discharge to the surface is at a depth ranging from 15 feet to 110 feet, with a total dissolved solids concentration of 17,500 mg/l.

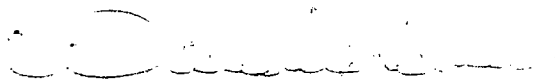
Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be

held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of September, 1987. To be published on or before September 25, 1987.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

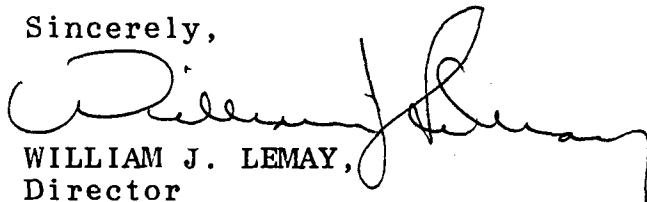


WILLIAM J. LEMAY, Director

S E A L

If there are any questions, please contact David Boyer at  
(505) 827-5812.

Sincerely,



WILLIAM J. LEMAY,  
Director

cc: Les Clements - OCD, Artesia  
Jack Ellvinger - EID-HW



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

August 27, 1987

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

*J. Shuman*  
*8/28/87*

Mr. David Griffin  
Environmental Affairs Superintendent  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

RE: Navajo Refinery Discharge Plan, GW-28

Dear Mr. Griffin:

On August 3, 1987, correspondence was sent to you listing some major issues that remain to be addressed by the Navajo Refining Company before your discharge plan can be approved. A complete list with specifics was to be provided within 30 days. Based on our research of correspondence, observations during the April, May and August sampling trips and review of the information submitted by your consultants, GCL, the following additional information and schedules must be submitted for review before approval is granted:

A. Refinery Area - Issues in addition to those listed in the August 3 letter:

1. The following tanks showed evidence of leakage. Submit a schedule for repair or replacement and clean-up of surrounding areas.
  - a. Bolted tank T122 had severe leaks.
  - b. Welded tank T133 had some seam leakage.
  - c. Welded Tank T135 had some seam leakage.
  - d. Tank T59 had severe leakage.
  - e. The railroad loading tank west of T837 had diesel leaking and standing in the open base.
2. The pump from tank T135 and the pump west of tanks T60 and T61 showed evidence of severe leakage. Submit a schedule for clean-up and a proposal and schedule for repair and a method of containment of future leaks.

3. Submit for approval a schedule for clean-up of surface contamination and a proposed method of containment/cleanup for future spills (with containment specifications and a schedule for construction) for the following ground areas that show evidence of past leaks and/or spills:
  - a. The area east of T130 and T132 (former site of T121) contains oil leakage from either tanks, valves or piping.
  - b. The sump with the open grate west of T122 has been used by trucks to dump their loads. There is no containment present, and oil has overflowed and run off the dump pad.
  - c. The carbon black truck loading area in the North Division has evidence of continued spills and leaks.
  - d. Leakage from the South Division cooling tower is flowing through an unlined ditch adjacent and parallel to the rail line.
4. The salt filtering area at the North API separator is approximately fifteen feet from Eagle Draw. Submit a proposed method for containment of any spills or leaks and a schedule for construction.
5. The catchment area at the rail loading facility west of the North Division had little evidence of spills or leaks. However, the drains between the rail lines appeared to have curbs that were too high to drain the surrounding area in the event of spills. Please submit the schematic of the catchment and drain system for the rail loading area. Is there concrete in the area between the drains?
6. During the August 12 sampling trip the overflow asphalt storage area (Pond) within the diked area of Tank T433 came to our attention. In the future, notification and approval from the OCD will be required prior the use of any unlined or diked areas for asphalt storage.

B. Pond Area - Issues in addition to those listed in the August 3 letter:

1. After OCD receives and evaluates the results of the August 12 ground water resampling at the pond, we will propose a schedule of minimal acceptable monitoring for discussion with Navajo. If some seepage water off Navajo's property exceeds ground water standards (either the numerical standard or background), it may be necessary for Navajo to obtain and submit to OCD covenants restricting use of that water until such time as concentrations drop below standards.
2. Oil/grease was detected in Monitor Well #6 during the August 12 sampling. Navajo must provide a schedule to investigate the source of the contamination, and provide OCD with information showing that such source has been eliminated.



3. Noticeable seepage was observed on the South and East dikes of the new pond. Lateral seepage can weaken them enough to cause failure. Submit a plan, with schedule, to rework or repair the ponds to eliminate lateral seepage.
4. Notification and approval of the OCD is required for any pond modifications or expansions.
5. Navajo plans for the closure of the ditch and Pond #1 after the wastewater plant and new pipeline are in operation. Submit copies for the discharge plan file of the proposed EID closure plan.

We are currently preparing for issuance of a public notice. Upon satisfactory resolution of the issues listed here and in our letter of August 3, and after review and consideration of any public comments, we expect to issue discharge plan approval. We look forward to discussing these issues on August 28, and at any other time so that we can conclude work on the plan.

Sincerely,



David G. Boyer  
Hydrogeologist/Environmental Bureau Chief

DGB:cr

cc: OCD - Artesia  
EID - Hazardous Waste Bureau

# Memo

From

DAVID G. BOYER

Hydrogeologist

5/5

To David Griffin -

Thanks for your assistance last week. Bill LeMay asked that I write a summary of our trip last week to give to the Governor since he will be visiting soon. The summary is being enclosed for your information.

A formal letter is to be prepared to put in writing remaining <sup>ing</sup> discharge plan issues. We would like to visit again about these on Tuesday the 26<sup>th</sup> if possible. I'll be in touch on exact time.

David

## ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



May 6, 1987

GARREY CARRUTHERS  
GOVERNORPOST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800MEMORANDUM

TO: WILLIAM J. LEMAY, DIRECTOR, OCD

FROM: DAVID G. BOYER, HYDROGEOLOGIST/ENVIRONMENTAL  
BUREAU CHIEF

SUBJECT: NAVAJO REFINERY - INSPECTION AND  
SAMPLING TRIP, APRIL 28-May 1, 1987

DIB

Navajo Refinery, located in Artesia, was required by OCD (Joe Ramey letter of April 29, 1980) to submit a discharge plan for approval. Since then they have been granted numerous extensions of time both for plan submittal, and to allow continued operation without an approved plan. Prior to the establishment of the Environmental Bureau in 1984, and subsequent acquisition of staff with expertise in hydrogeology, and chemical/environmental engineering, no clear direction was given the refinery as to what would constitute an acceptable plan.

In the fall of 1984 such direction was given, but uncertainty from the Federal EPA as to what refinery wastes they would classify as "Hazardous Waste" complicated development of a plan. These complicating issues have been resolved and I expect to complete permitting of the refinery by the time the current extension expires on September 15, 1987.

To that end, staff undertook a week-long inspection and sampling trip to evaluate the progress made to date, and identify and resolve remaining issues. These are outlined below:

1. The refinery is constructing and anticipates to place in operation by August 15, 1987, a wastewater treatment plant and underground pipeline. Current treatment is minimal (API separators remove most floating oil, and unlined open ditches within the refinery and for a distance of three miles carry the effluent to unlined ponds on the banks of the Pecos River). All ditches will be taken out of service

and the treatment plant will greatly improve effluent quality and eliminate suspended oil and particulates.

2. The unlined ponds will remain, but the first pond containing sludges will be closed. Ground water immediately surrounding this pond is contaminated by hydrocarbons. However, there is strong evidence that at least some natural ground water in the immediate area of the ponds approaches or exceeds 10,000 mg/liter, above which ground water is not protected under State regulations. Since the salt level of the refinery waste is less than that amount, we are working with Navajo to complete the evaluation of the pond area and to determine which water is protectable, and that which is not. During this trip all important ground water monitoring wells were sampled. Once water quality is known, several regulatory strategies may be used to allow continued use of the ponds, and still provide water quality protection for ground waters having present or future use.

3. Recovery of refined product from past spills or leaks at the refinery continues with the use of six product recovery wells. This activity is separate from the discharge plan which concentrates on detecting current leaks and preventing future ones. Housekeeping issues are being addressed (eg. spills and overflows at loading racks, leaks from old surface tanks still in use, detection of underground product leaks, etc.). Navajo has been told it will need to provide OCD with commitments and schedules for performing work in this area. Such information must be provided prior to plan approval, but the actual work can be scheduled over the five-year period of the plan.

4. The unlined west fire pond receives very poor quality boiler effluent which is about four (4) times the total dissolved solids standard of 1000 mg/l. Navajo has been told they must demonstrate maximum allowed seepage loss (no more than one-half acre-foot per acre per year), switch to fresh water use (as used in the east fire pond), or line the pond. Navajo indicates they will likely convert the pond to fresh water use.

A follow-up trip to Artesia will be scheduled within 30 days. A letter to Navajo is being prepared that will outline all outstanding issues and ask Navajo for specific commitments and dates for their resolution. I will keep you informed of the progress of this matter.

DB/bok

ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION



GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Comments for Anita Lockwood, Acting Secretary, EMD and Tom Bahr, Secretary, Natural Resources Department OCD Highlight Summary for Week of April 30 Through May 7, 1987

Navajo Refinery, located in Artesia, was required by OCD (Joe Ramey letter of April 29, 1980) to submit a discharge plan for approval. Since then they have been granted numerous extensions of time both for plan submittal, and to allow continued operation without an approved plan. Prior to the establishment of the Environmental Bureau in 1984, and subsequent acquisition of staff with expertise in hydrogeology, and chemical/environmental engineering, no clear direction was given the refinery as to what would constitute an acceptable plan.

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2. The unlined ponds will remain, but the first pond containing sludges will be closed. Ground water immediately

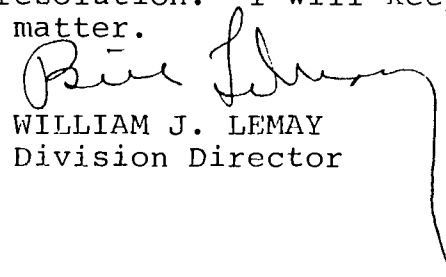
surrounding this pond is contaminated by hydrocarbons. However, there is strong evidence that at least some natural ground water in the immediate area of the ponds approaches or exceeds 10,000 mg/liter, above which ground water is not protected under State regulations. Since the salt level of the refinery waste is less than that amount, we are working with Navajo to complete the evaluation of the pond area and to determine which water is protectable, and that which is not. During this trip all important ground water monitoring wells were sampled. Once water quality is known, several regulatory strategies may be used to allow continued use of the ponds, and still provide water quality protection for ground waters having present or future use.

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A follow-up trip to Artesia will be scheduled within 30 days. A letter to Navajo is being prepared that will outline all outstanding issues and ask Navajo for specific commitments and dates for their resolution. I will keep you informed of the progress of this matter.

DB/bok

  
WILLIAM J. LEMAY  
Division Director

May 6, 1987

## ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



May 6, 1987

GARREY CARRUTHERS  
GOVERNORPOST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800MEMORANDUM

TO: WILLIAM J. LEMAY, DIRECTOR, OCD

FROM: DAVID G. BOYER, HYDROGEOLOGIST/ENVIRONMENTAL  
BUREAU CHIEF

SUBJECT: NAVAJO REFINERY - INSPECTION AND  
SAMPLING TRIP, APRIL 28-May 1, 1987

DJB

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and the treatment plant will greatly improve effluent quality and eliminate suspended oil and particulates.

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A follow-up trip to Artesia will be scheduled within 30 days. A letter to Navajo is being prepared that will outline all outstanding issues and ask Navajo for specific commitments and dates for their resolution. I will keep you informed of the progress of this matter.

DB/bok



ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



March 5, 1987

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Certified Mail  
Return Receipt Requested

Mr. David G. Griffin  
Environmental Affairs Supt.  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88201

Re: Effluent and influent pipelines  
Discharge Plan GW-28

Dear Mr. Griffin,

This office received on January 22, 1987, your submission dated November 10, 1986, containing the plans and specification for the above referenced pipelines. The plans were submitted and accepted pursuant to Water Quality Control Commission Regulation 1-202-B. The design and specifications are adequate for the purpose intended and, properly constructed and periodically inspected for leaks, will provide fresh water protection.

Please be advised that the acceptance of the plans and specifications for inclusion in your discharge plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

Sincerely,

A handwritten signature in cursive script that reads "Roger C. Anderson".

Roger C. Anderson,  
Environmental Engineer

RCA:et

NOV 16 1986

### *Refinery wastes put city on list*

Navajo Refinery wastes that were disposed of at the City of Artesia landfill in 1977 and before are the reason the site was included on a national list of 27 landfills suspected of containing dangerous materials.

All the landfills are on land leased from the federal Bureau of Land Management. The Loco Hills landfill also made the list.

Hydrologist Chuck Pettee of the BLM state office in Santa Fe said today the agency has a 1977 letter from a Navajo environmentalist that acknowledged the disposal of refinery wastes including hydrocarbons, phosphorous and asphaltic-type waxes at the landfill.

"That's what we're acting on as far as that landfill goes," Pettee said. He said wastes were disposed of in a pit that has since been covered, and that a "small report" done at the time of the letter showed a low probability for groundwater contamination.

The city landfill is scheduled for what is known as a "preliminary assessment" in 1987, Pettee said. Purpose of the assessment is to determine whether hazardous materials are present at a site and whether they present a risk to the public.

Mayor Ernest Thompson said he knew of no problems with the landfill.

"It used to be we didn't keep anyone out there and we didn't monitor anything," Thompson said. The fenced site now is either locked or manned at all times.

"I don't know of anything there that has caused or would cause concern," he said. The mayor said he recalled the waste oil pit, but said that to his knowledge, no dumping of petrochemical wastes has been done for years.

Thompson said BLM has discussed the sale of the Artesia landfill site to the city. The city now leases the land for a nominal fee.

BLM agency manager Charlie Dahlen in Carlsbad said the fact that the landfill made the national list does not necessarily mean the site is dangerous or of immediate concern.

Pettee said the assessment would be done "to figure out whether we need to worry about it or not."

12/16/86



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

September 22, 1986

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501-2088  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David G. Griffin  
Environmental Affairs Supt.  
Navajo Refining Co.  
P. O. Drawer 159  
Artesia, New Mexico 88201

RE: PROPOSED WASTEWATER TREATMENT PLANT  
DISCHARGE PLAN GW-28

Dear Mr. Griffin:

This office has received your letter dated August 19, 1986, containing the specifications for the above-referenced treatment plant. The design and specifications are adequate for the purpose intended, and, properly constructed, will provide fresh water protection.

Please be advised that the acceptance of the plans and specifications for inclusion in your discharge plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

Sincerely,

A handwritten signature in cursive script that reads "Roger C. Anderson".

ROGER C. ANDERSON  
Environmental Engineer

RCA:dp



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

July 18, 1986

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501-2088  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David G. Griffin  
Environmental Affairs Supt.  
Navajo Refining Co.  
P. O. Drawer 159  
Artesia, N.M. 88201

RE: DISCHARGE PLAN GW-28, NAVAJO REFINING CO., ARTESIA REFINERY

Dear Mr. Griffin:

This office has received your letter dated June 18, 1986, requesting an extension of approval to discharge without an approved discharge plan, and including a schedule for waste water treatment modifications. The current extension expired on that date. The request is based on the need to complete engineering plans and specifications for modifications to the refinery waste water treatment and disposal system, and for completion of the necessary hydrogeologic studies to demonstrate discharge plan approval for waste water disposal in ponds 2 and 3. The proposed modifications will include construction of a pipeline to replace the unlined ditch and discontinuance of disposal into Pond 1.

During a phone call on July 15, 1986, with David Boyer, OCD Environmental Bureau Chief, Navajo agreed to provide the following information to OCD on or before the dates listed below:

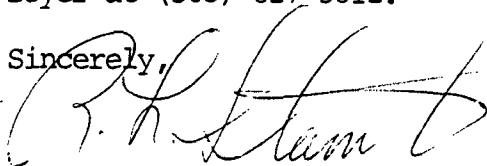
1. Equipment design and specifications to be provided OCD by August 20, 1986.
2. Geohydrology and water quality information previously requested, and necessary for continuation of discharge plan review to OCD January 1, 1987. This includes addressing comments and providing information requested in the OCD letter dated October 1, 1985.
3. Final process design and installation details to OCD by January 15, 1987.

OCD will, within 60 days of each submittal, review the information contained within said plans, specification and pertinent documents, and shall comment upon their adequacy of design for the intended purpose of ground and surface water protection.

Pursuant to Section 3-106.A of the New Mexico Water Quality Control Commission Regulations and for good cause shown, Navajo Refining Company's Artesia Refinery is hereby granted approval to discharge without an approved discharge plan commencing June 19, 1986, and expiring on September 15, 1987, or the date of discharge plan approval, whichever is earlier. This extension is conditioned on Navajo submitting the previously agreed upon information on or before the dates stipulated.

If you have any questions or comments, please feel free to contact Dave Boyer at (505) 827-5812.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. L. Stamets", written over a horizontal line.

R. L. STAMETS  
Director

RLS:DGB:dp

cc: Artesia District Office

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

EASYLINK  
62905278

ARTESIA, NEW MEXICO 88210

RECEIVED

JUL 18 1986

SANTA FE

July 16, 1986

Mr. David G. Boyer  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

Re: FLOOD IMPACT TO NAVAJO WASTE WATER SYSTEM

Dear Dave:

On Monday, July 14, 1986 I gave Mr. Mike Williams of the Artesia OCD office a tour of the effluent ditch and evaporation ponds. The tour was to show him the effects of the recent flooding in the Pecos Valley and the steps Navajo has taken to recover from it.

The almost non-stop rainfall which precipitated the flood began on Monday, June 23, and by Wednesday June 25, the Pecos was out of its banks in full flood. The river stayed out of its banks until Sunday, June 29. At the height of the flood (Wednesday, Thursday, & Friday) the Pecos was approximately 6 miles wide at the U.S. Highway 82 bridge crossing East of Artesia.

The storm event data available from the Soil Conservation Service on rainfall and from USGS on flood levels shows an interesting contrast. I am awaiting the actual data, the information given here comes from discussions with various parties. The rainfall event appears to be greater than a 100 year event, but flood levels were significantly lower. I suspect this demonstrates the effectiveness of all the flood control projects completed in the Pecos Valley over the past 20 years, following the devastating 1964 flood.

Taking advantage of a brief break in the weather during the high water stage, Navajo aerially surveyed the lower stretches of the effluent ditch and the evaporation ponds. The survey revealed that the evaporation ponds were holding in good shape despite being surrounded by flood waters, but the lower stretch of the effluent ditch was under water.

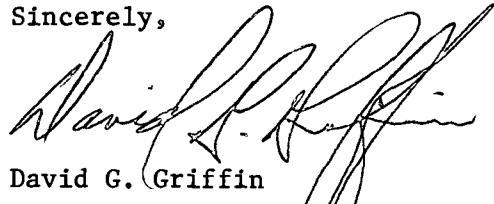
Eagle Draw, which was running bank to bank full at the time, empties into the Pecos River at an apex in a bend of the river. This headlong collision of the river and Eagle Draw was pushing water South, directly over the effluent ditch. The ditch became submerged by the flow on Wednesday, with the water not receding until Sunday. the submergence of the effluent ditch not only resulted in the mixing of the refinery effluent with the massive amounts of flood water, it also allowed a great deal of flood water to enter the evaporation pond. Rough calculations indicate that as much as 50 to 70 million gallons of water entered the ponds, raising the level approximately 2 to 2.5 feet.

Remarkably the recedence of the flood water left only two small breaks in the effluent ditch. There was a break in the bank of the ditch over an 8 foot span at a spot about 150 yards up stream of Pond #1, and a smaller 3 foot break in the ditch about 450 yards upstream of Pond #1. Navajo sent in a maintenance crew on foot first thing Monday, June 30. Using shovels and sand bags they made temporary repairs to both spots on the ditch. Navajo will make more extensive repairs as soon as conditions permit the use of heavy equipment in the area.

As you are aware, Navajo will be replacing the effluent ditch within the next 12 months with a pipeline. In light of the fact that the ponds withstood the flood without problems, the replacement of the ditch with a pipeline should leave Navajo in very good shape to withstand natural disasters.

If you have any questions please contact me.

Sincerely,



David G. Griffin

Supt. of Environmental  
Affairs & Quality Contr.

DGG/pb



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

June 18, 1986

Mr. David G. Boyer  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

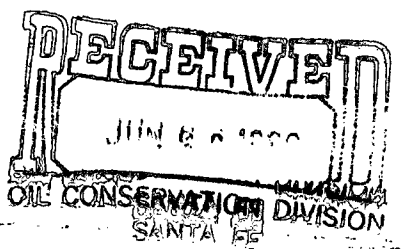
Re: *Schedule for Waste Water Treatment Facilities, Investigation of Effluent Ditch & Pond #1, and Request for Discharge Extension*

Dear Dave:

Enclosed you will find a schedule covering the installation of a primary waste water treatment system and pipeline to replace Navajo's effluent ditch and remove evaporation pond #1 from service in preparation for closure of these facilities. I have also included for your information a copy of our site investigation plan covering the effluent ditch and pond #1.

As you are aware Navajo's current extension to discharge expires today, therefore, I am requesting an extension to continue to discharge. I am uncertain as to how you wish to continue to handle Navajo's discharge, but as you will see on the attached schedule, the design of the waste water treatment facility and pipeline will be complete by August 20, 1986. Following design completion, Navajo will be in a position to modify our discharge plan submittal to accurately reflect the changes underway. Please let me know how you wish to proceed toward final issuance of a discharge permit.

I will be forwarding to you in the near future a copy of Navajo's closure plan submittal to EID - Hazardous Waste Section, covering the ditch and pond #1 for your information.



Sincerely yours,

David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGG/pb  
attachment



5/15/86

Waste Water Treatment Facility

NAVAJO SCHEDULE

<u>DATE</u>	<u>EVENT</u>
20 MAY 86	START PREDESIGN
20 AUG 86	EQUIPMENT SPECS OUT
10 OCT 86	EQUIPMENT PURCHASED
10 OCT 86	START PREP. OF INST. PACKAGE
15 JAN 87	SOLICIT BIDS FOR INSTALLATION
15 FEB 87	AWARD CONSTRUCTION
15 AUG 87	CONSTRUCTION COMPLETE
15 SEP 87	START UP COMPLETE

RECEIVED

JUN 16 1986

OIL CONSERVATION DIVISION

PUBLIC NOTICE

NEW MEXICO ENVIRONMENTAL IMPROVEMENT DIVISION  
HAZARDOUS WASTE SECTION  
P.O.Box 968  
Santa Fe, New Mexico 87504

PUBLIC NOTICE NO.10

June 13, 1986

NOTICE OF INTENT TO  
CLOSE A HAZARDOUS WASTE DISPOSAL UNIT

The State of New Mexico is authorized to operate a hazardous waste management program in lieu of the Federal program for those portions of the Resource Conservation and Recovery Act (RCRA) in effect prior to the enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The HSWA imposes additional requirements on hazardous waste management facilities which will be administered and enforced by the U.S. Environmental Protection Agency (EPA) until the State of New Mexico receives additional authorization for these requirements.

Under authority of the New Mexico Hazardous Waste Act (§ 74-4-1 et. seq. NMSA 1978) and the New Mexico Hazardous Waste Management Regulations (HWMR-2), the NMEID proposes to approve a closure plan for Navajo's TEL Weathering Area. The facility, EPA I.D. Number NMD048918817, is located at 501 East Main Street Artesia, New Mexico. Navajo's Artesia facility is involved in the processing of crude oil into asphalts, fuel oils, diesel fuels, gasoline, jet fuels and LPG. Wastes generated by these activities have been both disposed of in the TEL Weathering Area and land treated on-site. The TEL Weathering Area is known to contain leaded tank bottoms and API separator sludge.

Interim status for this unit has been terminated based on Navajo's decision to not certify an adequate ground-water monitoring system and financial assurance and to not submit a Part B operating permit application for the TEL Weathering Area. Due to Navajo's current waste management practices, the unit is no longer used for disposal of hazardous wastes. The cause for this closure is a request by the Company and does not suggest any wrongdoing on the part of the Company.

The proposed closure plan describes the procedures to be used to remove all hazardous constituents in the soil to background levels and treat the waste on an adjacent land treatment unit.

Persons wishing to comment upon the proposed closure plan, or who wish to request a public hearing, should submit, in writing, comments and requests, along with the commentor's name and address to the New Mexico Health and Environment Department, Environmental Improvement Division, 1190 St. Francis Drive, P.O.Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache. Requests for a public hearing shall state the nature of the issues proposed to be raised in the hearing. These comments and/or requests must be received no later than July 28, 1986 to be considered.

The administrative record for these decisions consist of a permit application (Part A), a "notice of intent to close a hazardous waste disposal unit", a fact sheet, a closure plan, and related correspondence. The administrative record may be reviewed at either the EID District IV Office, 200 East 5th Street, Roswell, New Mexico, or the EID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico.

To obtain a copy of the administrative record or any part thereof, please contact:

Peter H. Pache, Program Manager  
Hazardous Waste Section  
New Mexico Environmental Improvement Division  
1190 St. Francis Drive, P.O.Box 968  
Santa Fe, New Mexico 87504-0968  
(505) 827-2924

All written comments submitted on the proposed closure plan will be considered in formulating a final decision. The EID will notify Navajo and each person who submitted a written comment during the public comment period of the final decisions or of any public hearing which may be scheduled.

If, after consideration of all written comments, these proposed actions become EID's final decisions, EID will issue to Navajo final approval for the proposed closure plan. The final approval will require that the Company's closure activities be performed in conformity with applicable State and Federal law, as well as within the terms of the Company's closure plan.

## FACT SHEET

### Intent to Close Under the New Mexico Hazardous Waste Act

Activity: Closure of Navajo Refining Company, Inc.'s TEL Weathering Area.

Facility Name: Navajo Refining Company, Inc.

EPA I.D. Number: NMD048918817

Location: 501 East Main Street  
Artesia, New Mexico 88210

Landowner: Navajo Refining Company, Inc.

Facility Operator: Navajo Refining Company, Inc.

Unit of Concern: TEL Weathering Area

Comment Period:

Any person, including the applicant, who wishes to comment on the tentative decision to approve the proposed closure plan for the TEL Weathering Area may do so by submitting written comments to the New Mexico Environmental Improvement Division (NMEID), Harold Runnels Building, 1190 St. Francis Drive, P. O. Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache, (505) 827-2924. All such comments must be received by July 28, 1986 to be considered. Note that the TEL Weathering Area lost interim status under the provisions set forth in the Hazardous and Solid Waste Amendments of 1984 (HSWA) for those facilities which did not certify an adequate ground-water monitoring system and financial assurance, and submit a Part B operating permit application by November 8, 1985; however, no wrongdoing on the part of the facility is to be inferred.

Procedures for Requesting a Hearing:

Any person, including the applicant, who wishes to request a public hearing concerning the proposed actions may do so by submitting a written request to the New Mexico Environmental Improvement Division (NMEID), P. O. Box 968, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico, 87504-0968, ATTENTION: Peter H. Pache. Any request for a hearing shall be submitted in writing and shall state the nature of the issues proposed to be raised in the hearing. All requests must include the requestor's name and address. Requests for a hearing must be received by July 28, 1986 to be considered.

Interim Status Activities:

Since November 19, 1980, Navajo Refining Company, Inc. has been operating under interim status as a hazardous waste disposal facility. Primary activities conducted at the facility consist of the processing of crude oil into asphalts, fuel oils, diesel fuels, gasoline, jet fuels and LPG. Wastes generated by these activities have been both disposed of in the TEL Weathering Area and land treated on-site. The TEL Weathering Area is known to contain leaded tank bottoms and API separator sludge.

#### Reasons Supporting Decision to Close:

Navajo no longer places hazardous waste in the TEL Weathering Area and wishes to close this surface impoundment under interim status. On November 8, 1985, Navajo chose not to certify an adequate ground-water monitoring system and financial assurance and not to submit a Part B operating permit application for the TEL Weathering Area. As this automatically resulted in the loss of interim status for this unit, Navajo was required to submit a closure plan within 15 days of the November 8, 1985 deadline. On November 22, 1985, Navajo submitted a closure plan to satisfy this requirement. Subsequent NMEID review indicated that the Company's proposal to close the TEL Weathering Area was justified. Therefore NMEID is hereby formally proposing to approve the closure plan for the TEL Weathering Area.

#### Closure of the Unit:

The unit is no longer operating under interim status. If this tentative decision becomes the final administrative disposition of the closure plan, closure will begin immediately. Navajo's closure plan has been previously submitted, reviewed and modified by NMEID. A copy is available for public review at the NMEID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico and the NMEID District IV Office at 200 East 5th Street, Roswell, New Mexico. The public notice and this fact sheet include the proposed approval of the closure plan for this disposal unit. The public is provided an opportunity to submit written comments on the plan, or request a public hearing as previously described elsewhere in this fact sheet. The owner/operator must implement the approved closure plan in accordance with its stipulated time schedule.

#### Final Decisions:

All written comments submitted on the proposed closure plan will be considered in formulating a final decision. The NMEID will notify Navajo Refining Company, Inc. and each person who submitted a written comment during the public comment period of the final decisions made, or of any public hearing which may be scheduled.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION



1935 - 1985

TONEY ANAYA  
GOVERNOR

May 9, 1986

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Daniel G. Griffin  
Environmental Affairs Supt.  
Navajo Refining Co.  
P. O. Drawer 159  
Artesia, N.M. 88201

RE: DISCHARGE PLAN GW-28  
NAVAJO REFINING CO.  
ARTESIA REFINERY

Dear Mr. Griffin:

This office has received your letter dated April 29, 1986, requesting an extension of approval to discharge without an approved discharge plan. The current extension expired April 18, 1986. The request is based on the need for an extensive investigation of the effluent ditch and evaporation ponds, as per NMEID-HW directives. The extension is needed to complete the investigation plans and formulate a preliminary schedule for engineering and construction of an intensive primary waste water treatment system and pipeline.

Pursuant to Section 3-106A of the New Mexico Water Quality Control Commission Regulations and for good cause shown, Navajo Refining Company's Artesia Refinery is hereby granted approval to discharge without an approved discharge plan for 60 days commencing April 19, 1986, and expiring June 18, 1986. Any further extensions will be contingent on the Oil Conservation Division receiving the investigation plan schedule and the preliminary schedule for engineering and construction referred to in your April 29, 1986 letter.

If you have any questions or comments, please feel free to contact Dave Boyer at (505) 827-5812.

Sincerely,

R. L. STAMETS  
Director

RLS:RCA:dp

cc: Artesia District Office

Attorney General of New Mexico

INFORMATION



PAUL BARDACKE  
Attorney General

P.O. Drawer 1508  
Santa Fe, New Mexico 87504  
505-827-6000

KAY MARR  
STEPHEN WESTHEIMER  
Deputy Attorneys General

May 2, 1986

Ms. Marsha L. Butler  
Legal Assistant  
Kellahin and Kellahin  
P.O. Box 2265  
Santa Fe, New Mexico 87504-2265

Re: Navajo Refining Company v.  
New Mexico Water Quality Control Commission,  
Appeal No. 9103

Dear Ms. Butler:

Enclosed are the draft originals of the transcripts of the three days of meetings of the Water Quality Control Commission. My corrections are in red ink; your notations have been checked by me and I have placed an "OK" by the correction if it appears accurate. I did not have much more luck than you on the inaudible portions.

Specifically, on the December 10, 1985 transcripts, I made corrections on pages 11, 13, 14, 17, 18, and 23. On the December 11, 1985 transcript, I made corrections on pages 15, 16, 18, 23, 24, 27, 28, 4, 7, 10, 13, 14, 16, 19, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, and 33. On the January 14, 1985 transcripts, I made corrections on pages 8, 12, 19, 20, 28, 37, 40, 41, 44, 46, 48, and 51. If you disagree with any of these corrections, we should probably get together and listen to the tapes and reach some compromise. If they are acceptable, then I propose you prepare a Stipulation for filing with the transcripts stating that this is the agreed-upon transcript of those Commission meetings.

If I can be of further help, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to read "Andrea L. Smith", is written over the typed name.

ANDREA L. SMITH  
Attorney for the  
Water Quality Control Commission

Marsha L. Butler  
May 2, 1986  
Page 2 of 2

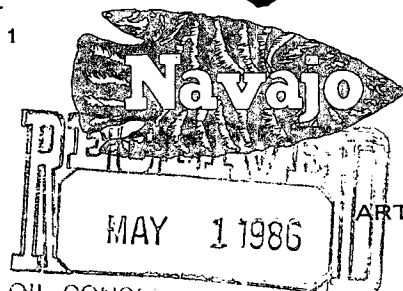
ALS:mem  
Enclosures

cc: New Mexico Water Quality Control Commissioners  
Duff Westbrook, EID Attorney



TELEPHONE  
(505) 748-3311

TELETYPE  
(910) 986-0990



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

OIL CONSERVATION DIVISION  
SANTA FE

April 29, 1986

Mr. David G. Boyer  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

Re: Navajo Refining Company Discharge Status

Dear Mr. Boyer:

Confirming our conversations of the past couple of weeks, Navajo has just launched into an extensive investigation of the effluent ditch and evaporation ponds, per directives from NMEID - Hazardous Waste Department. Fortunately a great deal of the information required for this investigation has already been compiled under your direction during our discharge plan work.

In addition to the investigation, Navajo is committed to installing an intensive primary waste water treatment system and a pipeline to carry the treated effluent down to the second series of evaporation ponds. When this system is complete, Navajo will address closing the effluent ditch and first evaporation pond under applicable Hazardous Waste regulations. To this end, Navajo will have a detailed investigation plan ready by the end of May, and should also have a preliminary schedule for engineering and construction of the treatment system and pipeline. Therefore, Navajo requests an extension to continue to discharge, and will provide you with copies of the investigation plan schedule and treatment system schedule when they are complete by the end of May.

I want to thank you for your diligence and patience while Navajo has had to address the effluent system under EID - RCRA authority. I have attached a copy of Ms. Alice Barr's investigation needs for your information. Please contact me concerning any questions you may have.

Sincerely,

David G. Griffin

DGG/pb

attachment

DRAFT

(1) the location,  and amounts of all chemical <sup>constituents</sup> and other wastes identified by EPA as hazardous  in 40 Code of Federal Regulations part 261 which have been stored, treated or disposed of or which may be located on the site;

(2) a description of the facility in which such waste <sup>constituents</sup> ~~were~~ or <sup>are</sup> ~~is~~ being stored, treated or disposed of, together with engineering plans, specifications and drawings, if any, of the facility used for such storage, treatment or disposal. If such plans, specifications or drawings are unavailable, please submit any other information available regarding the existence and characteristics of liners, leachate collection systems, or other waste containment systems;

(3) the manner in which such waste <sup>constituents</sup> ~~were~~ stored, treated or disposed of, including whether all or a part of such waste <sup>constituents</sup> ~~were~~ or <sup>are</sup> ~~is~~ containerized or non-containerized and the depth of burial of any ~~landfilled~~ waste;

(4) a determination of soils depth, type, characteristics and areal distribution;

(5) determination of horizontal and vertical permeabilities of soils at the site;

*See - Le. Hydrology*  
(6) definition of location, type, transmissivity, bedding, structure and other characteristics of bedrock and/or other confining strata;

(7) determination of strike and dip of bedrock; and location and attitude of any faults;

*primary test*  
(8) determination of direction and velocity of groundwater flow in all water-bearing zones in an area likely to be affected by migration of ~~constituents~~ <sup>constituents</sup> from the site, considering soils and bedrock characteristics, and the location of aquifers most likely to be affected which are or may be a source of public or private water supply;

(9) determination of areas of discharge and recharge for groundwater in the area likely to be affected by migration of ~~constituents~~ <sup>constituents</sup> from the site;

*Personal*  
(10) determination of interaction between groundwater and ~~Pecos River~~ <sup>Pecos River</sup>

(11) establishment of a network of monitoring wells, including recommendations as to the location, depth, and construction thereof, designed to monitor groundwater elevations and water quality;

(12) a sampling and analysis program for monitoring groundwater, both on-site and off-site, which describes frequency of sampling and sampling and analytical procedures.

(13) a proposed schedule for the implementation of the items set forth above; and

(14) the means and frequency of reporting to ~~the~~ <sup>EID</sup> the implementation of the items set forth above, and the results of the sampling, analysis and monitoring program as the same may be approved.

(15.) Proposed plan to define contaminant plume, if ~~any~~ one exists  
(16.) Proposed corrective action, if necessary

Harding Lawson Associates



February 25, 1986

State of New Mexico  
Oil Conservation Division  
P.O. Box 2088  
Land Office Building  
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

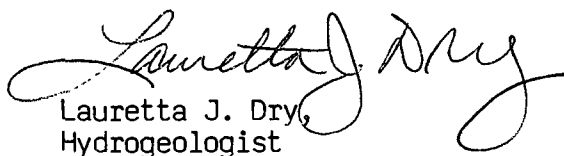
Enclosed please find the public review copy of the Discharge Plan for Navajo Refinery Company, Artesian Refinery, which you sent me last week. This document was extremely useful to me in understanding the geology and hydrogeology at the refinery site. Also, thank you for the additional information on OCD's responsibilities.

After I complete my evaluation of the hydrogeologic conditions at the refinery site, based primarily on information available in the Discharge Plan which you provided, I will send you a copy of our report.

Thank you for your assistance.

Yours very truly,

HARDING LAWSON ASSOCIATES

  
Lauretta J. Dry,  
Hydrogeologist

LJD/jd

Enclosure: Discharge Plan

50 YEARS



1935 - 1985

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800



TONY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

February 18, 1986

Laurie Dry  
Harding-Lawson Associates  
7655 Redwood Blvd.  
Navato, CA 94947

Re: Request for  
Information for Navajo  
Refinery

Dear Ms. Dry:

Enclosed as you requested is the public review document for the Discharge Plan for Navajo Refinery Company, Artesia Refinery. This document contains relevant company submittals and OCD responses on effluent discharges to ground water. Please return the document within seven to ten working days.

Also included and not to be returned is a copy of the Water Quality Act, the State WQCC Regulations, and OCD's delegated responsibilities. The copies of the water quality analyses for Navajo are also yours to keep.

I would appreciate your sending me a copy of your site assessment document. I would be especially interested in the hydrological section of the assessment.

Sincerely,

DAVID G. BOYER  
Hydrogeologist  
Environmental Bureau

Encs.

DGB/dp

*copy*

50 YEARS



1935 - 1985



TONY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

December 17, 1985

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David G. Griffin,  
Environmental Affairs  
Superintendent  
NAVAJO REFINING COMPANY  
P.O. Drawer 159  
Artesia, NM 88210

Re: Navajo Refining Company  
Discharge Plan, Artesia  
Refinery

Dear Mr. Griffin:

This office has received your letter of December 13, 1985, which requested an extension of time to April, 1986, for the Navajo Refinery to discharge without an approved discharge plan. The current approval expires December 19, 1985. The request states that during this time and beginning December 8, 1985, an extensive, six-week sampling program will commence to provide effluent for treatability and toxicity studies. The reason for this work is the requirement that Navajo comply with various hazardous waste regulations under the State's RCRA program. At the completion of the analysis period in March, Navajo states that decisions will be made regarding the type of treatment and mode of discharge to be used for effluent disposal. At that time you plan to provide more information and a schedule concerning implementation of new treatment and discharge systems.

Pursuant to Section 3-106.A. of the New Mexico Quality Control Commission Regulations and for good cause shown, Navajo Refining Company's Artesia Refinery is hereby granted approval to discharge without an approved discharge plan for 120 days commencing December 20, 1985, and expiring April 18, 1986. To receive a further extension beyond that date, Navajo will need to provide the scheduling and implementation information referred to in the December 13, 1985 letter. Prior to April 18, 1986, Navajo should communicate and discuss with OCD Environmental Bureau staff the progress of the RCRA permitting as it affects discharge plan decisions. This will allow a new discharge plan

submittal and compliance schedule to be drawn up and approved prior to the April 18th temporary approval expiration date.

If you have any questions regarding this matter, please contact David Boyer of the Environmental Bureau at 827-5812.

Sincerely,

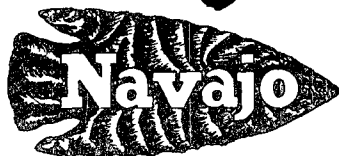
A handwritten signature in dark ink, appearing to read 'R. L. Stamets', followed by a large, stylized number '6'.

R. L. STAMETS  
Director

RLS/DB/dp

cc: OCD - Artesia District Office  
EID - Hazardous Waste Section  
Joel M. Carson, Lossee & Carson, P.A.  
Randy Hicks, GeoScience Consultants, Ltd.

TELEPHONE  
(505) 748-3311



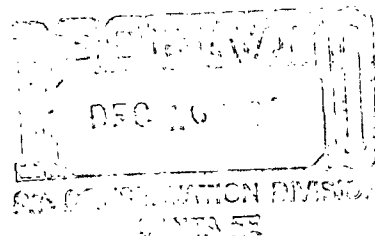
## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
(910) 986-0990

December 13, 1985



Mr. Richard L. Staments, Director  
N.M. Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

Re: Navajo Refining  
Discharge Plan

Dear Mr. Staments:

Due to events beyond the control of either Navajo Refining or the Oil Conservation Division, we find it necessary to request an extension to discharge without an approved discharge plan. In your letter of September 19, 1984, Navajo was granted the right to discharge without an approved discharge plan until December 19, 1985. During this period of time Navajo was required to submit various elements of a discharge plan for OCD review per an agreed to schedule. I believe you will find the record to show that both Navajo and OCD have done well in living up to that schedule. There is every reason to believe that we would have completed the discharge permitting by now if a conflict had not arisen with NMEID - Hazardous Waste.

Navajo was formally notified by an August 2, 1985 notice from NMEID - Hazardous Waste Department that the effluent ditch and the No. 1 Evaporation Pond has fallen under New Mexico Hazardous Waste Management Regulations due to trace amounts of Chromium in the sediment. In response to this notice Navajo has had a number of conversations and meetings with Mr. Boyer of your staff and Ms. Alice Barr of NMEID - Hazardous Waste, in an effort to define the impact of this notice and develop a plan to address the impact. Attached you will find a copy of a letter to Ms. Barr outlining the schedule Navajo is currently following in an effort to determine the optimum effluent treatment process that Navajo can install to address both NMOCD discharge requirements and NMEID - Hazardous Waste concerns.

The program, as outlined in the schedule, should put Navajo into a position by April of 1986 to know what treatment and discharge option will most cost effectively meet the requirements of the regulatory divisions involved. Therefore Navajo requests that you extend our right to discharge until April, 1986 at which time Navajo will supply your division with the results of the study currently underway, and will then be in a



position to give you a more detailed schedule concerning implementation of new treatment and discharge systems. I will be happy to answer any questions you may have concerning this request.

Sincerely,

A handwritten signature in cursive script, appearing to read "David G. Griffin".

David G. Griffin  
Supt. of Environmental  
Affairs & Quality Control

DGG/pb

attachments

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
(910) 986-0990

DGGr

December 5, 1985

Ms. Alice Barr  
Environmental Improvement Division  
P. O. Box 968  
Santa Fe, NM 87501

Re: Evaporation Pond Schedule

Dear Alice:

The following is the best schedule I can put together at this time covering all of the interrelated steps necessary to address the effluent ditch and first evaporation pond under applicable HWMR-2 regulations.

September 1985 - Navajo hired PSC in conjunction with CH2M-Hill to evaluate waste water treatment processes necessary to remove the affected ditch and pond from service.

October, 17 & 18, 1985 - Meeting at CH2M-Hill's Seattle office uncovered a big problem with treatment processes meeting WQCC stream standards for discharge to the Pecos River.

November 12, 1985 - Meeting with NMEID Surface Water Quality group to discuss discharge limits applicable to Navajo and the Pecos River. Discussed a plan for studying Navajo's effluent to determine treatability of meeting River Standards and toxicity testing to evaluate impact of discharge on River.

December 8, 1985 - Commencing with Evening Shift on this day, Navajo will begin a six (6) week intensive sampling program to provide effluent for analysis and treatability study to CH2M-Hill's Montgomery, Alabama laboratory. Toxicity studies will be conducted at CH2M-Hill's Gainesville, Florida lab.

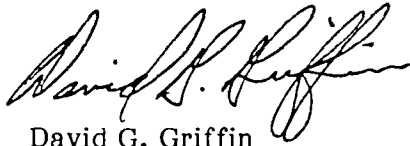
February 1986 - The treatability and toxicity studies will be complete after which attention will refocus on determining the best treatment process.

March 1986 - If all goes well, we should be in a position to initiate permitting procedures to cover the new treatment system. The schedule beyond this point becomes very difficult to pin down at this time.

Sometime during the early Summer of 1986, I should be able to supply you with a detailed schedule covering engineering, procurement, construction, and commissioning of the new treatment system. Hopefully all of this can be completed by the Summer of 1987. After commissioning, we will be in a position to physically address the ditch and pond.

As in the past I will keep you informed of any changes and updates to this schedule as they evolve. Please feel free to call me anytime concerning questions on this or any other matter.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "David G. Griffin". The signature is fluid and cursive, with the first name "David" being the most prominent.

David G. Griffin

DGGr/pb

11/12/85 - Meeting w/ Navajo Refinery  
Dave Griffin, Wink Chamberlain - Navajo  
Daniel B. Knorr - Parkhill, Smith & Cooper, Consultants.  
Daniel Knorr - Navajo engaged them to solve  
wastewater problems - will sample  
and study wastewater streams  
- 3 options looking at real hard  
① Artesia WWTP - Oil removal & chromium  
② Upgrade plant w/city -  
Pipeline to plant  
Would go to secondary treatment  
section at plant - would provide  
capital for upgrade of plant.  
③ Discharge directly to river - have  
to get by C/D & EPA permitting -  
COD may be problem

③ Discharge to ponds #2 & 3 after some  
bio treatment - Alternatives discussed - (a) Meet  
Part 310.3.A Standards - B&C should be OK (High TDS  
etc) (b) Demonstrate TDS by ponds > 10,000 TDS,  
no foreseeable future use for water 1-9000 TDS and attenuation  
of organics - EPA future reg worry Griffin  
Treatment - Oil Removal - API - Oil removal  
② Secondary - Air Stripping  
for other  
③ Oil & Grease 30 mg/L oil  
Bio treatment to  
lower COD, BOD, stabilize organics  
Different  
levels depending  
on discharge type

The following are definites :

- ① Pond 1 to be closed
- ② Some type of Bio-treatment to be used
- ③ No ditches. all pipelines no matter what the alternative

Told Navajo that will need a letter requesting time extension and giving dates when decisions will be made (so can plan compliance schedule). They will know more after EIS meeting this PM

50 YEARS



1935 - 1985

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800



TONEY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

August 9, 1985

Mr. David G. Griffin  
Environmental Affairs Superintendent  
Navajo Refining Company  
P.O. Drawer 159  
Artesia, New Mexico 88210

Re: Navajo Refinery Discharge  
Plan Submittals

Dear Mr. Griffin:

The purpose of this letter is to acknowledge receipt of the July 31, 1985 discharge plan submittal for Navajo Refinery and to correct certain misconceptions contained in recent correspondence to OCD regarding previous submittals. The following listed correspondence is pertinent to this matter and copies are enclosed:

- (1) OCD letter to Geoscience Consultants, Ltd., dated May 23, 1985;
- (2) Letter of OCD from Losee & Carson, P.A., Attorney's for Navajo, dated June 21, 1985;
- (3) Letter to OCD from Geosciences dated July 22, 1985;
- (4) Letter to OCD from Geosciences dated July 31, 1985.

On February 25, 1985, effluent flow and chemical characteristics were provided to OCD by Navajo Refinery pursuant to the agreed upon schedule of compliance. The OCD reviewed this information and had no questions or comments. However, no response was sent to Geoscience clearly stating that we had no comments. This was our mistake and was corrected in our letter of May 23, 1985, where we agreed that a response should have been made indicating the submittal was satisfactory. We also neglected to send copies of that letter to Navajo Refinery and their attorneys.

Again, this was our oversight and in the future all involved parties will be sent copies of OCD's correspondence.

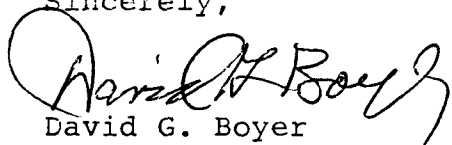
On March 5, partial response to OCD's questions (dated February 7, 1985) on the hydrogeology near Navajo Refinery was received from Geoscience. The response was partial because answers to some questions included the phrases "reserved" or "to be provided." Some of these issues, especially our problems with continued use of the unlined ditch, were discussed in a meeting with Navajo representatives on March 6. As stated in our May 23 letter, OCD comments on any remaining unresolved questions related to previous submittals would be provided after we received the material due June 17, 1985.

With this background, we were surprised and upset to receive the June 21 letter from Joel Carson stating that Navajo had not received any comments on the February 25 Navajo submission, nor on a February 19, submission to OCD. Since we have never received a document dated February 19 we can only surmise that the submittal was the March 5 document referred to above. The June 21 letter was followed by the July 22 letter which again stated that the OCD was responsible for Navajo delays and did not mention EPA/EID actions affecting the discharge plan submittal.

With the exception described above, OCD response to Navajo submittals have been as agreed to in the schedule of compliance. Additionally, during visits and phone conversations we have had with Navajo beginning in April, our staffs discussed the likelihood that new EPA requirements on waste disposal would radically change the original discharge plan proposal, and essentially would make some of our discharge plan concerns moot. The letter accompanying the July 31 Navajo submittal states that this has occurred and that there are substantial changes in the discharge plan as a result.

Regarding the July 31 submittal, we will provide comments as soon as possible, but certainly no later than the end of the 60-day review period. As I have stated previously, in several conversations with you, the OCD will continue to work closely with you and Geoscience to finalize a discharge plan, and will cooperate with you and EID in review of pond closure plans.

Sincerely,



David G. Boyer  
Environmental Bureau Chief

xc: R. L. Stamets, OCD Director  
Randall T. Hicks, Geoscience Consultants, Ltd.  
Joel M. Carson, Losee & Carson, P.A.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

May 23, 1985

Mr. Randall T. Hicks  
Vice President  
GeoSciences Consultants, Ltd.  
500 Copper Ave., NW Suite 220  
Albuquerque, NM 87102

Re: Discharge Plan for Navajo  
Refinery, Artesia, NM

Dear Mr. Hicks:

Jami Bailey of this office briefed me on your phone call of May 17, 1985, regarding the Navajo Refinery Discharge Plan. The reason that no comments on Navajo's February 25, 1985 submittal were sent from OCD is that we had none. However, we should have responded and notified you in that event. We are still awaiting analyses of samples collected during our April sampling trip and will forward copies when they are received.

When the information due June 17th is received, we will immediately provide comments on it, and on any unresolved questions related to previous submittals.

Sincerely,

*David G. Boyer*

DAVID G. BOYER  
Hydrogeologist,  
Environmental Bureau

DGB/dp



JUN 25 1985  
LAW OFFICES

LOSEE & CARSON, P.A.

300 AMERICAN HOME BUILDING

P. O. DRAWER 239

ARTESIA, NEW MEXICO 88211-0239

A.J. LOSEE

JOEL M. CARSON

ELIZABETH LOSEE

JAMES E. HAAS\*

AREA CODE SOS

746-3508

\*LICENSED IN TEXAS ONLY

REPLY TO:

P. O. BOX 1787

ALBUQUERQUE, NEW MEXICO 87103

SOS-243-3727

21 June 1985

Mr. Richard Stamets  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Schedule of Compliance for Navajo  
Refinery Discharge Plan

Dear Mr. Stamets:

According to the schedule of compliance for the Navajo Refinery discharge plan, Navajo Refining Company ("Navajo") was scheduled to submit a final waste-water management plan to the Oil Conservation Division ("OCD") for review June 17, 1985. The plan should include a design for a waste management system and a response to the OCD's comments on previous submissions. This schedule contains deadlines not only for submissions to the OCD, but also requires the OCD technical staff to supply comments to Navajo on specific dates. At the present time Navajo has not received any comments on the February 25 submission on effluent flow and chemical characteristics. Additionally, Navajo has not received the OCD's comments on the February 19 submission.

We fully understand that the OCD technical staff has been required to spend considerable time on matters outside of the Navajo discharge plan, such as the proposed order regarding produced water in the San Juan Basin, and the environmental problems surrounding the Lee Acres Landfill in the San Juan Basin. Navajo has also been working very hard with the U.S. Environmental Protection Agency ("EPA") regarding the final disposition of the waste streams at Navajo. The new regulations and policy statements of the EPA with regards to the waste streams for refineries throughout the nation will have a substantial impact on the discharge plan at Navajo.

Mr. Richard Stamets

21 July 1985

-2-

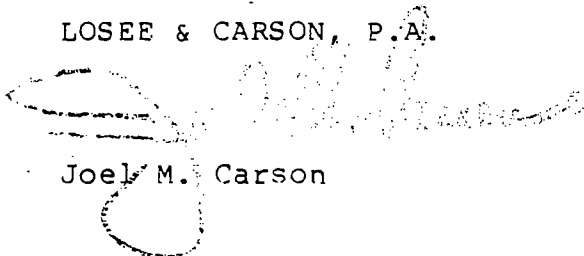
These two external factors have prevented Navajo from submitting a final waste-water management plan with design of a waste management system to the OCD on June 17, 1985. The plan cannot be designed without proper input from the OCD regarding the waste streams. Additionally, the plan cannot be designed without proper consideration of the final EPA rulings on these waste-water streams.

Because the OCD is approximately 30 days behind schedule with its comments on Navajo's February 25 submission, the June 17, 1985 submission of Navajo will be submitted to the OCD on or about July 17, 1985. This rescheduling is fully consistent with the schedule of compliance; the last paragraph of the schedule provides for delays in receipt of the OCD's comments.

If you have any questions or comments regarding this extension of the schedule, please contact either myself, Mr. David Griffin of Navajo, or Mr. Randall T. Hicks, Geoscience Consultants, Ltd. We believe that adequate time to review the OCD's comments and the EPA's new policy will provide a better product with respect to the final discharge plan.

Yours truly,

LOSEE & CARSON, P.A.

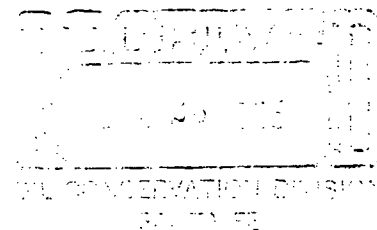
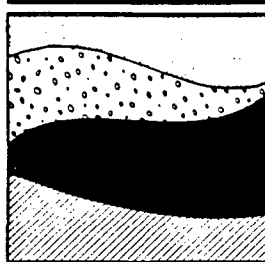


Joel M. Carson

JMC:bjk

cc: Mr. David Griffin  
Mr. Randall T. Hicks  
Mr. Dave Boyer

**Geoscience  
Consultants, Ltd.**



July 22, 1985

Mr. Dave Boyer  
Energy and Minerals Department  
Oil Conservation Division  
P.O. Box 2083  
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Reference: Submission of Navajo Discharge Plan

Pursuant to our conversation today the Navajo Discharge Plan will be submitted to NMOCD on or before the end of July. This submission is consistent with our schedule of compliance which allowed for more delays due to NMOCD delays in responding to Navajo submissions and also is consistent with previous phone conversations discussing the substantial regulatory changes with respect to the refinery wastewater management practices.

I appreciate your assistance on this matter and look forward to completing the discharge plan and working with you on the closure of the Evaporation Pond #1.

Very truly yours,  
GEOSCIENCE CONSULTANTS, LTD.

Randall T. Hicks  
Vice President

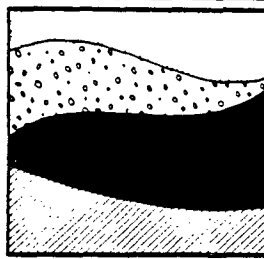
RTH/pe/BOYER001.LTR

cc/Dave Griffin

Headquarters  
500 Copper Avenue N.W., Suite 325  
Albuquerque, New Mexico 87102  
(505) 842-0001

Washington Area Office  
5513 Twin Knolls Rd., Suite 216  
Columbia, Maryland 21045  
(301) 596-3760

**Geoscience  
Consultants, Ltd.**



July 31, 1985

RECEIVED

AUG 8 1985

Mr. Richard Stamets  
Energy and Minerals Department  
Oil Conservation Division  
P.O. 2088  
Sante Fe, New Mexico 87501

OIL CONSERVATION DIVISION

RE: Discharge Plan Application For Navajo Refining Company  
Artesia New Mexico Facility

Dear Mr. Stamets:

On behalf of Navajo Refining Company, Geoscience Consultants, Ltd. is pleased to submit the Discharge Plan Application for Navajo's Artesia New Mexico facility. A substantial change in the regulation of the surface impoundments under The Resource Conservation and Recovery Act (RCRA) has necessitated a corresponding change in the proposed methods for wastewater management. Section 7.0 of this document addresses the effect of these proposed regulations on the discharge plan.

A second substantial development has also occurred in the past few weeks. Chemical analyses conducted by the New Mexico Environmental Improvement Division has resulted in NMEID classifying Pond Evaporation Lagoon #1 as a hazardous waste surface impoundment. It is not economically realistic for Navajo to maintain Pond #1 as a hazardous waste surface impoundment; therefore, Navajo has elected to close this surface impoundment pursuant to RCRA. To address both these issues, biological treatment of wastewaters generated at the facility will be implemented prior to 1988. Biological treatment will substantially improve the character of the effluent discharged at Navajo.

Section 7.0 outlines the options that Navajo will be pursuing toward biological treatment of wastewaters. We anticipate that technical staff from NMOCD, NMEID and the Navajo will be working closely together within the next few months to determine a schedule for the implementation of wastewater treatment at Navajo's Artesia facility as well as closure plans for Pond #1. We would like to meet with NMOCD and NMEID in September concerning this matter.

Headquarters

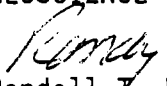
500 Copper Avenue N.W., Suite 325  
Albuquerque, New Mexico 87102  
(505) 842-0001

Washington Area Office

5513 Twin Knolls Rd., Suite 216  
Columbia, Maryland 21045  
(301) 596-3760

Please note that Figures 4-7 and 4-9 have been revised and are submitted with this document; other figures submitted with the original submission remain unchanged. If you should have any questions regarding this submission or require more information please contact me.

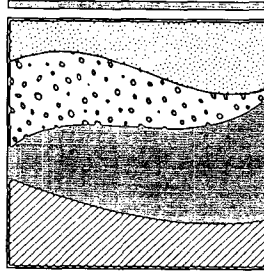
Very Truly Yours,  
GEOSCIENCE CONSULTANTS, LTD.

  
Randall T. Hicks  
Vice President

RTH/pe/STAME001.LTR  
Enclosures

cc: Mr. David Griffin, Navajo Refining Company  
Peter Pache, NMEID

Geoscience  
Consultants, Ltd.



July 31, 1985

RECEIVED

AUG 8 1985

Mr. Richard Stamets  
Energy and Minerals Department  
Oil Conservation Division  
P.O. 2088  
Sante Fe, New Mexico 87501

OIL CONSERVATION DIVISION

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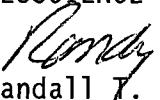
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Headquarters  
500 Copper Avenue N.W., Suite 325  
Albuquerque, New Mexico 87102  
(505) 842-0001

Washington Area Office  
5513 Twin Knolls Rd., Suite 216  
Columbia, Maryland 21045  
(301) 596-3760

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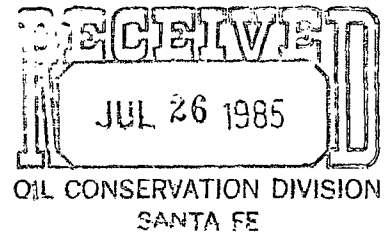
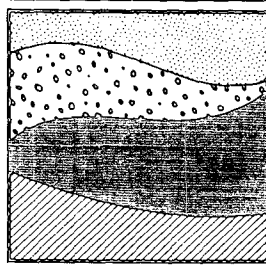
Very Truly Yours,  
GEOSCIENCE CONSULTANTS, LTD.

  
Randall T. Hicks  
Vice President

RTH/pe/STAME001.LTR  
Enclosures

cc: Mr. David Griffin, Navajo Refining Company  
Peter Pache, NMEID

Geoscience  
Consultants, Ltd.



July 22, 1985

Mr. Dave Boyer  
Energy and Minerals Department  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501


Dear Mr. Boyer:

Reference: Submission of Navajo Discharge Plan

Pursuant to our conversation today the Navajo Discharge Plan will be submitted to NMOCDC on or before the end of July. This submission is consistent with our schedule of compliance which allowed for more delays due to NMOCDC delays in responding to Navajo submissions and also is consistent with previous phone conversations discussing the substantial regulatory changes with respect to the refinery wastewater management practices.

I appreciate your assistance on this matter and look forward to completing the discharge plan and working with you on the closure of the Evaporation Pond #1.

Very truly yours,  
GEOSCIENCE CONSULTANTS, LTD.

  
Randall T. Hicks  
Vice President

RTH/pe/BOYER001.LTR

cc/Dave Griffin



LAW OFFICES

LOSEE & CARSON, P. A.

300 AMERICAN HOME BUILDING

P. O. DRAWER 239

ARTESIA, NEW MEXICO 88211-0239

A. J. LOSEE

JOEL M. CARSON

ELIZABETH LOSEE

JAMES E. HAAS\*

AREA CODE 505

746-3508

\*LICENSED IN TEXAS ONLY

REPLY TO:

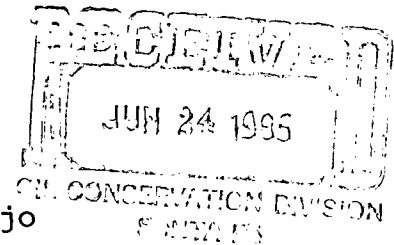
P. O. BOX 1787

ALBUQUERQUE, NEW MEXICO 87103

505-243-3727

21 June 1985

Mr. Richard Stamets  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501



Re: Schedule of Compliance for Navajo  
Refinery Discharge Plan

Dear Mr. Stamets:

According to the schedule of compliance for the Navajo Refinery discharge plan, Navajo Refining Company ("Navajo") was scheduled to submit a final waste-water management plan to the Oil Conservation Division ("OCD") for review June 17, 1985. The plan should include a design for a waste management system and a response to the OCD's comments on previous submissions. This schedule contains deadlines not only for submissions to the OCD, but also requires the OCD technical staff to supply comments to Navajo on specific dates. At the present time Navajo has not received any comments on the February 25 submission on effluent flow and chemical characteristics. Additionally, Navajo has not received the OCD's comments on the February 19 submission.

We fully understand that the OCD technical staff has been required to spend considerable time on matters outside of the Navajo discharge plan, such as the proposed order regarding produced water in the San Juan Basin, and the environmental problems surrounding the Lee Acres Landfill in the San Juan Basin. Navajo has also been working very hard with the U.S. Environmental Protection Agency ("EPA") regarding the final disposition of the waste streams at Navajo. The new regulations and policy statements of the EPA with regards to the waste streams for refineries throughout the nation will have a substantial impact on the discharge plan at Navajo.

Mr. Richard Stamets

21 July 1985

-2-

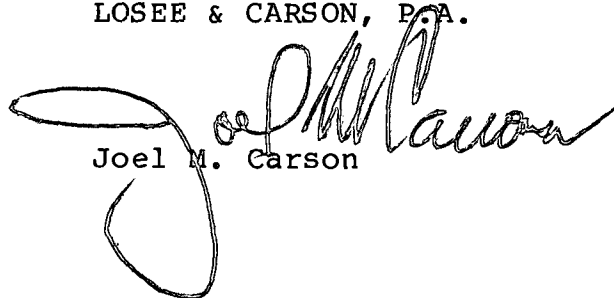
These two external factors have prevented Navajo from submitting a final waste-water management plan with design of a waste management system to the OCD on June 17, 1985. The plan cannot be designed without proper input from the OCD regarding the waste streams. Additionally, the plan cannot be designed without proper consideration of the final EPA rulings on these waste-water streams.

Because the OCD is approximately 30 days behind schedule with its comments on Navajo's February 25 submission, the June 17, 1985 submission of Navajo will be submitted to the OCD on or about July 17, 1985. This rescheduling is fully consistent with the schedule of compliance; the last paragraph of the schedule provides for delays in receipt of the OCD's comments.

If you have any questions or comments regarding this extension of the schedule, please contact either myself, Mr. David Griffin of Navajo, or Mr. Randall T. Hicks, Geoscience Consultants, Ltd. We believe that adequate time to review the OCD's comments and the EPA's new policy will provide a better product with respect to the final discharge plan.

Yours truly,

LOSEE & CARSON, P.A.

A large, stylized handwritten signature in dark ink, appearing to read "Joel M. Carson". The signature is written over the typed name and extends upwards and to the left.

Joel M. Carson

JMC:bjk

cc: Mr. David Griffin  
Mr. Randall T. Hicks  
Mr. Dave Boyer

STATE OF  
NEW MEXICO

OIL  
CONSERVATION  
DIVISION



MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal

Time  
2 PM

Date  
6/10/85

Originating Party

Other Parties

Randy Hicks Geoscience  
Consultants

Dave Boyer, ACID

Subject

Norajo Refinery Discharge Plan

Discussion

Randy called to say that Navajo will submit some material on June 17<sup>th</sup> but will delay submittal of other information until decisions are made regarding EPA requirements for <sup>AP</sup>wastewater treatment. I told Hicks I would not object to a short delay, but that we would not wait months and months while EPA proposes, repropose and comments. He said they will probably submit a plan with a series of options. I told him we were committed to working with them to get the ponds permitted, but that the ditch would require action, especially since the ground water near the ditch near the river may be contaminated.

Conclusions or Agreements

Randy says Navajo will send letter explaining facts of delay before Monday 6/17. They will also submit <sup>other</sup> material, previously requested, on that date.

Distribution

Navajo File

Signed

DH Boyer

50 YEARS



TONEY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION



1935 - 1985

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

May 28, 1985

Mr. Randall T. Hicks  
Vice President  
GeoSciences Consultants, Ltd.  
500 Copper Ave., NW Suite 220  
Albuquerque, NM 87102

Re: Discharge Plan for  
Navajo Refinery,  
Artesia, NM

Dear Mr. Hicks:

Enclosed as promised are the organic analytical results of our April sampling trip to Navajo Refinery. They are the only ones we have received to date. As you can see, the benzene and toluene levels decrease down the ditch away from the API Separator but other undefined aromatic compounds remain. Please also note that the new upgradient monitoring well had m-xylene and other undefined aromatic compounds detected. As you know, this well is some distance from the ponds but relatively close to the unlined ditch.

Sincerely,

A handwritten signature in cursive script that reads "David G. Boyer".

DAVID G. BOYER  
Hydrogeologist  
Environmental Bureau

DGB/dp

Encs.

cc: Ann Claassen, NM EID  
David Griffin, Navajo Refinery



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

May 23, 1985

Mr. Randall T. Hicks  
Vice President  
GeoSciences Consultants, Ltd.  
500 Copper Ave., NW Suite 220  
Albuquerque, NM 87102

Re: Discharge Plan for Navajo  
Refinery, Artesia, NM

Dear Mr. Hicks:

Jami Bailey of this office briefed me on your phone call of May 17, 1985, regarding the Navajo Refinery Discharge Plan. The reason that no comments on Navajo's February 25, 1985 submittal were sent from OCD is that we had none. However, we should have responded and notified you in that event. We are still awaiting analyses of samples collected during our April sampling trip and will forward copies when they are received.

When the information due June 17th is received, we will immediately provide comments on it, and on any unresolved questions related to previous submittals.

Sincerely,

*David G. Boyer* <sup>pg 3</sup>

DAVID G. BOYER  
Hydrogeologist,  
Environmental Bureau

DGB/dp

STATE OF  
NEW MEXICO

OIL  
CONSERVATION  
DIVISION



MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal

Time  
9:10

Date  
5/17/85

Originating Party

Other Parties

Randy Hicks 842-0001

Subject

Navajo Discharge Plan

Discussion

A letter will be received by us by 5/27/85 outlining the following: (1) no response has been made by OCS to their submittal dated 3/25/85. This response was due 4/22. (2) Because of the delay of EPA's Regs re wastewater treatment not fully formulated; + (3) EIS Reg changes for reclassification of hazardous waste from API separators, they are facing a 30 day delay. This will affect their 6/17 report, but should not affect the 12/19/85 final deadline.

Conclusions or Agreements

Distribution

Signed

Jim Bailey

TELEPHONE  
(505) 748-3311

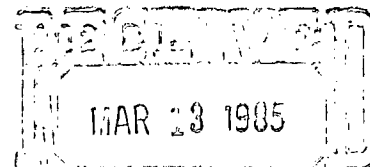
TELETYPE  
(910) 986-0990



## REFINING COMPANY

501 EAST MAIN STREET ○ P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210



March 8, 1985

OIL CONSERVATION DIVISION  
SANTA FE

Mr. David G. Boyer, Hydrogeologist  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Dave:

Enclosed is the signed statement of compliance with WQCC Regulation 1-203.A that Randy Hicks had sent me for signature and which was supposed to be in the submittal he gave you during our March 6th meeting.

Sincerely

David G. Griffin  
Superintendent of Environmental  
Affairs and Quality Control

DGGr/cjo  
Enclosure

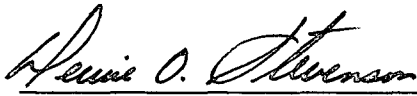
February 19, 1985

Mr. Richard Stamets  
NMOCD  
P.O. Box 2088  
Santa Fe, new Mexico 87501

Dear Mr. Stamets:

Navajo Refining Company, Inc. agrees to comply with the provisions of Section 1-203.A of the WQCC Regulations and we agree that neither the existing compliance schedule nor an approved discharge plan will exempt Navajo from Section 1-203.A.

Sincerely,

A handwritten signature in cursive script, reading "Dennis O. Stevenson". The signature is written in dark ink and is positioned above a horizontal line.

NAVAJO REFINING COMPANY





MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time 9AM

Date

3/5/85

Originating Party

Other Parties

Joel Carson (746-3508)  
(Navajo Torrey)  
Subject

Dave Boyer OCB  
Devon Jercinovic EID  
(separate conversation)

Discussion Joel called about photographs of Navajo  
said to be in OCB files. Were they? I checked and  
found none. He also asked about signs  
used in Devon's report and was concerned  
because he said they were inaccurate and  
misrepresent the situation. I told him I  
didn't know but that Devon checks her facts.  
I called Devon and was told that collaborative  
information was in hazardous waste files for  
Diesel loss. She also said that Oscar has photos  
of the refinery.

Conclusions or Agreements

I called Joel and told him that he should  
talk to Devon about the report and that we  
would attempt to get the photos returned  
to OCB. [Photos located in near OCB file room and

Distribution

Navajo File

Signed

D. F. Boyer

at EMS. MB 3/8/85

## MEMORANDUM OF MEETING OR CONVERSATION

El Paso County  
Initialed☒ Telephone☐ Personal

Time

2:00

AM ☒PM ☐

Date

8/3/83

Parties Involved

Affiliation

Telephone Number

TO: Devon Jercinovic

4913 Pastura NW  
ALBUQUERQUE, NM

From: Tom Kranicevich

Consultant -

87107

345-5257 or 265-9000  
(Home Office) leave message  
with daughter  
Vicki

DISCUSSION:

Navajo Refinery

Wanted to know status of Permitting for Solv-Ex Tar Sands Project - was interested in seeing if they needed him to coordinate their permitting needs.

He used to work as the Chief Environmentalist for Navajo Refinery (almost M.S. in Environmental Management by law degree background is in electrical engineering). While there, he worked with Paul Yaniga (Groundwater Technology Inc - GTI) on the fuel recovery going on at Navajo. They have calculated, based on monitoring wells and other field data, that the refinery has approximately 100,000 BBLS of diesel grade fuel (51 gravity) beneath it. In addition, while he worked there, he knew of at least 3 incidents where at least 30,000 BBLS OF GASOLINE were lost from a pipeline.

Pipeline is owned by Southern Gas - Found valves leaking and when the dug down found product between

CONCLUSION OR AGREEMENT:

12' to 18' - saturated - 71 gravity gasoline.

OGS put in two recovery wells (For diesel grade) and between 11/20/82 and 4/6/83, they recovered 190,000 gallons diesel.

Signed

Devon E. Jercinovic



MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone

☒ Personal

Time 1:30PM

Date 3/6/85

Originating Party

Other Parties

Navajo Refining Co. (with  
Lawyers & Consultants)

OCD

Subject

Discussion of Navajo Discharge plan (ESP.  
unlined ditch)

Discussion

Navajo's consultant (Randy Hicks) summarized ditch information and requested OCD input as to what would be needed to be approved. I told him ditch was a line source of potential recharge, groundwater was at ~10-15 feet ~~and~~ (near refinery) and little information known downstream about present conditions. One monitoring well not enough, not three either. Detailed study would need to be undertaken to demonstrate ditch not leaking (coning, etc. wells, etc.) and even this may not pick up changes in soil lithology that may allow significant recharge.

Conclusions or Agreements

Discussed alternatives to unlined ditch and suggested they study economics. Told them would need to do lots of work to get unlined ditch approved. No problems approving pipeline.

Distribution

Navajo File

Signed

David H. Boyer

March 6 1985

OCD/NAVAJO

Randy Hicks  
Joel Carson  
David Griffin  
Phil Baca

Dave Boyer  
R. L. Stamefs

W. C. Chamberlain

D. O. Stevenson

Geoscience/NAVAJO  
Loren & Carson P.A.  
Navajo Refining Co.

OCD

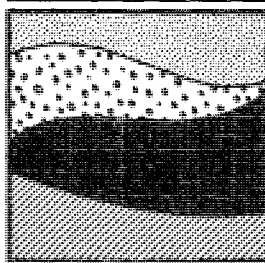
OCD

OCD

Navajo

NAVAJO

**Geoscience  
Consultants, Ltd.**



HAND DELIVERED

March 5, 1985

Dave Boyer  
NMOCD  
P.O. Box 2088  
Santa Fe, New Mexico 87501

RE: Responses to Comments:

Dear Mr. Boyer:

Please find enclosed our responses to several of your comments. We would like to discuss some of your comments with you prior to our submission of the final response.

Our responses, which follow the same numbering as your comments, are presented below. The effluent data is summarized in the attached report

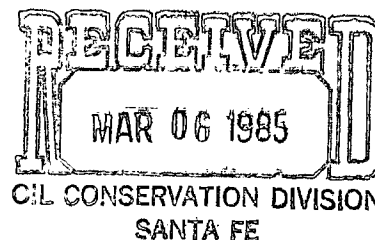
If you have any questions regarding these responses let me know.

Sincerely,  
GEOSCIENCE CONSULTANTS, LTD.

A handwritten signature in cursive script that reads "Randall Hicks".

Randall T. Hicks  
Vice President

Enclosure  
RTH/pg



## RESPONSE TO NMOCD FEBRUARY 7, 1985 COMMENTS

### DISCHARGE PLAN ISSUES

- 1) The attached letter of agreement assures that Navajo will comply with Section 1-203.A. of the WQCC regulations. A spill protection plan for the refinery is scheduled for submission on June 17, 1985.
- 2) We concur that the WQCC Regulations do not specifically exempt discharges regulated by RCRA or the New Mexico Hazardous Waste Regulations. However, it was never the intention of Navajo Refining Company to cover the RCRA regulated discharges under this discharge plan or any discharge plan. Our September 13, 1984 letter to Mr. Ramey included a preliminary outline for the discharge plan which provided for a brief description of the waste management systems regulated under RCRA. This discharge plan addresses only the discharges which are disposed in the evaporation ponds.

Enclosed is a copy applicable portions of of Navajo's RCRA Part B Application. We urge NMOCD to carefully examine this document to determine if this application meets or exceeds WQCC regulatory standards for the RCRA facilities at Navajo. Only one copy of the RCRA Part B application is enclosed. It is submitted for your information only and should not be considered part of this discharge plan.

- 3 and 4) Enclosed is a plan to conduct further hydrogeologic studies at the refinery area to determine if:
  - a) The water quality of Pecos Valley sand/silt aquifer is greater than 10,000 mg/l
  - b) Any potential leakage from the evaporation ponds will affect ground water with a concentration less than 10,000 mg/l.
  - c) The conveyance ditch has integrity and is protecting ground water

### HYDROGEOLOGY

- 1) yes
- 2 and 9) Enclosed are legible copies of water well logs provided to Geoscience by the Roswell State Engineer's Office for the one mile perimeter around the refinery. Some of illegible sections of the well logs were, in fact, our own notes. These notes are now reproduced in the copies.
- 3) Examination of the enclosed well logs will show that no wells for domestic industrial or agricultural purposes (for which data exist) had been completed in either the

Pecos Valley sand/silt aquifer or the shallow perched confined water bearing unit within the area covered by the well logs.

- 4) Kelly, V.C., 1971. Sec References Cited of Sections 1.0-6.0.
- 5) Enclosed is a completed copy of the U.S. Soil Conservation Service Soil Survey of Eddy County from which Figure 4-2 was derived. It is available at most SCS offices. All soil data are derived from Table 4 of this publication.
- 6) The Queen Formation dips slightly to the east and the depth to the top of the Queen will vary. Figure 4-3 of the discharge plan shows the depth to the top of the Queen.
- 7) Noted
- 8) The Bower sand is locally identified by the oil industry as the bottom water sand within the Seven Rivers Formation. The sand is discontinuous and is identified only in the subsurface. The cross section in the discharge plan (Figure 4-3) show the extent in this sand. The wells completed in this sand demonstrate that the ground water in this unit is under artesian pressure.
- 10) Logs for these monitor wells do not exist. Details of the product recovery system will be provided in the plans and specifications to the discharge plan.
- 11) Enclosed
- 12) All of the wells drilled in the refinery area exhibit artesian conditions. This is demonstrated in the lithologic logs which identify the water-bearing units. There are not enough data to determine the source of the demonstrated artesian head in the unit.
- 13) The anomalies may be due to monitor wells tapping different water-bearing units under slightly different pressure conditions.
- 14) Reserved
- 15) Enclosed
- 16) See enclosed plan for hydrogeologic studies.
- 17) The correct pond level for Pond # 3 is 3305. Levels will vary seasonally.
- 18 and 19) Reserved
- 20) To be provided

- 21) To be provided
- 22) Revised figure 4-9 (hand delivered to NMOCD on January 25, 1984) shows the location of well 16 north and west of well # 13. A log for well #16 is in our copy of Appendix A. An additional copy of this well log is found in the enclosure.
- 23) Map will be provided. Contingencies will be presented in the final discharge plan.

#### WATER QUALITY

- 1) These aquifers cannot be affected by the discharge due to the demonstrated artesian conditions in these units. We have provided detailed site specific water quality data on "ground water most likely to be affected by the discharge" (see 3-106.C.3, WQCC regulations). Regional water quality data for these artesian aquifers is available in several reports cited in the discharge plan.
- 2) See enclosed plan for further hydrogeologic studies
- 3) See enclosed plan for further hydrogeologic studies
- 4) "well water" should read "water well". It's location is given in figure 4-9. No completion data are available for this well.
- 5 and 6) Reserved
- 7) Enclosed
- 8) Addressed in February 25, 1985 submission

#### PLANT PROCESSES

- 1) No
- 2 and 4) Plans and specifications will be submitted to the NMOCD engineer (WQCC Regulations 1-202) after Discharge Plan Approval. Phosphates are used in the boilers. Steam generation should volatilize many organic species. All ground water quality data for the refinery area is given in the discharge plan.
- 3) The TEL pond is not part of this discharge plan and is presently being closed under RCRA.
- 5) To be provided
- 6) Total chromium. The analyses for CN has not been repeated. The data is correct to the best of our knowledge.



7) Waste stream # 19 on Figure 5-2 should read #18. Unnumbered waste streams have not and will not be characterized.

8) No

DESCRIPTION OF HYDROGEOLOGIC STUDIES TO BE CONDUCTED  
AT NAVAJO REFINING COMPANY

EVAPORATION PONDS

In order to demonstrate that ground water with a TDS concentration of 10,000 mg/l or less will not be affected by potential leakage (discharges) from the unlined evaporation ponds, Navajo will demonstrate:

- 1) That the observed high TDS levels near the evaporation ponds are not a manifestation of a localized body of poor quality water.
- 2) That leakage will not result in exceedence of standards for any ground water in other areas or in other (lower) aquifers.
- 3) That high TDS ground water is a natural condition and not due to past practices of Navajo Refining Company.
- 4) That stream standards for the Pecos River will not be exceeded.

In order to make this demonstration the following tasks will be completed:

- 1) Two well points will be installed down gradient and one monitor well up gradient from the evaporation ponds. If required a third drivepoint will be installed down gradient from the ponds.
- 2) Water from these wells will be analyzed for specific conductance and TDS.
- 3) The water level in the wells will be measured and the flow regime determined
- 4) Water samples from the Pecos River (at low flow) will be analyzed

Figure 1 shows the proposed location of 1-1/4 inch well points, the 4" monitor well and the Pecos River sampling points for this demonstration.

The existing wells in the area of the evaporation pond are fully adequate for monitoring the potential effects of the evaporation ponds on ground water. The new well shown in figure 1 will monitor the ground water up gradient from the ponds. This well program is consistent with the requirement for a demonstration under 3-109.C.1. The existing wells may not establish the precise direction of flow of ground water in the Pecos River Valley silt/sand aquifer because the heads could be affected by fluctuations of the river level. More widely-spaced well data are necessary to establish the regional flow directions. The flow direction will be established and are expected to demonstrate that ground water with less than 10,000 mg/l TDS cannot be affected by any discharge from the ponds.

A one well, two well point program will be initiated in March. A fully penetrating well (30-35 feet deep) adjacent to the existing, up gradient wells is should demonstrate the existence of a confining layer below the sand/silt aquifer and confirm the poor water quality above and below the confining layer. This well will also replace the existing up gradient well. Two well points will be completed down gradient from the ponds to specifically determine the ground water flow regime.

Sampling of the Pecos River will also be conducted during a low flow period (January-April) to demonstrate that past practices have not caused, and potential future wastewater disposal practices will not result in, an exceedence of stream (surface water) standards. The flow direction in the sand/silt aquifer must be established in order to determine if and where the ground water which flows beneath the ponds

discharges to surface water. It is at this ground water discharge point that surface water samples must be taken upgradient samples will also be analyzed.

The data from this task should corroborate the existing data and demonstrate that:

- 1) The water quality in the Pecos River Valley  
silt/sand is greater than 10,000 mg/l TDS  
and
- 2) Stream standards will not be exceeded due to  
to the wastewater disposal practices of Navajo

#### FIRE WATER PONDS

A well down-gradient from the fire water ponds to monitor potential effects of seepage from the pond is not necessary. The existing monitor wells demonstrate artesian conditions and potential pond leakage should not affect the discharge plan approval process.

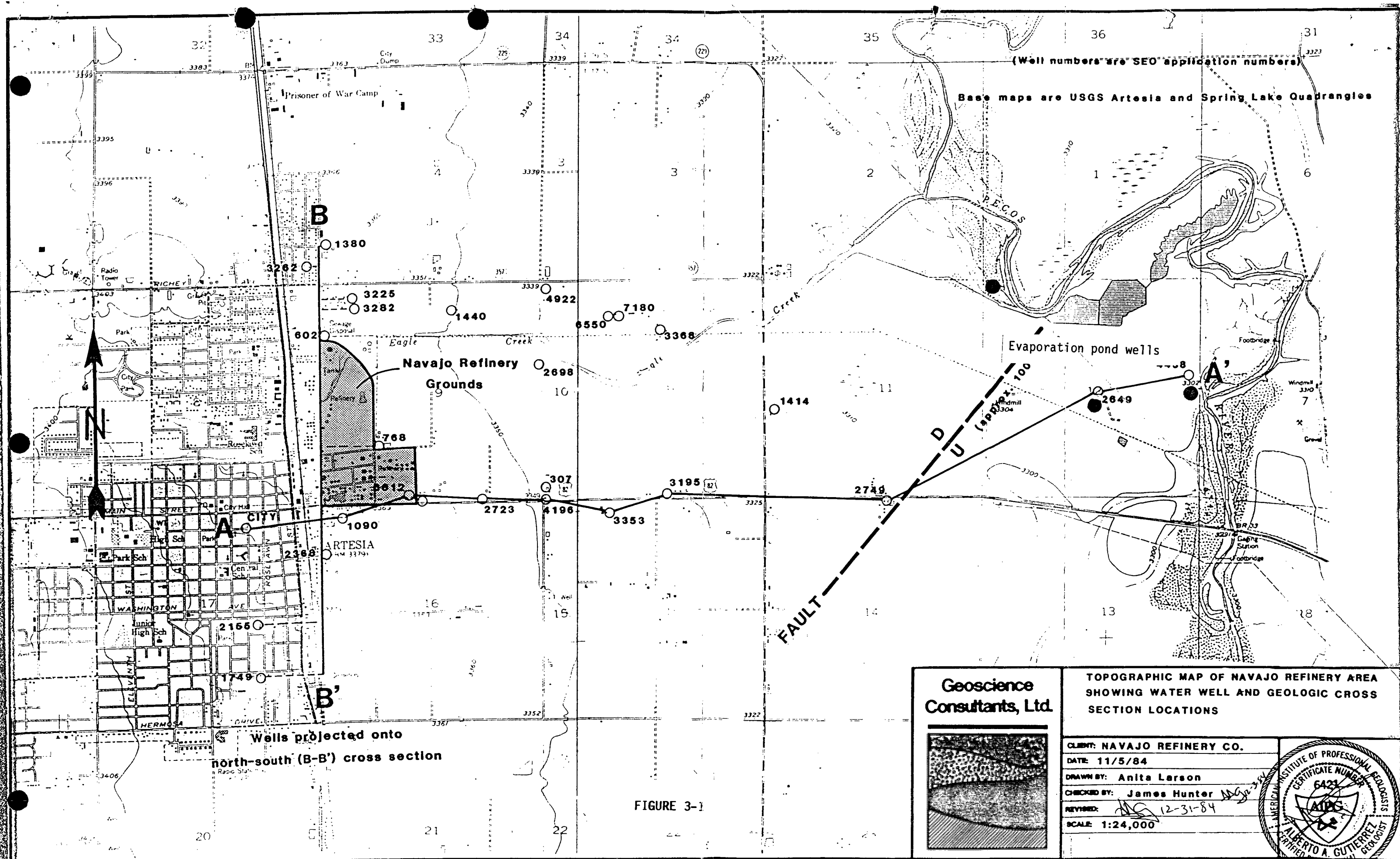
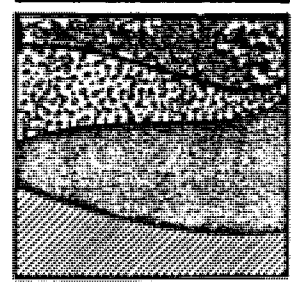



FIGURE 3-1

**Geoscience Consultants, Ltd.**



**TOPOGRAPHIC MAP OF NAVAJO REFINERY AREA  
SHOWING WATER WELL AND GEOLOGIC CROSS  
SECTION LOCATIONS**

CLIENT: NAVAJO REFINERY CO.	
DATE: 11/5/84	
DRAWN BY: Anita Larson	
CHECKED BY: James Hunter	
REVISION: 12-31-84	
SCALE: 1:24,000	

STATE ENGINEER OFFICE  
WELL RECORD

FIELD ENGR. LOG

## Section 1. GENERAL INFORMATION

(A) Owner of well NAVAJO REFINING COMPANY Owner's Well No. 16  
 Street or Post Office Address Box 159  
 City and State Artesia, New Mexico 88210

Well was drilled under Permit No. RA-6775-E and is located in the:

- a. S1W  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  of Section 12 Township 17 S Range 26 E N.M.P.M.  
 b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
 c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
 Subdivision, recorded in \_\_\_\_\_ County.  
 d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
 the \_\_\_\_\_ Grant.

(B) Drilling Contractor Clyde Tidwell License No. WD-406  
 Address Box 17, Route 1, Artesia, New Mexico 88210  
 Drilling began 3/21/81 Completed 3/29/81 Type tools Cable Size of hole 8 in.  
 at well is 3307 ft. Total depth of well 60 ft.  
 Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 10 ft.

## Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
10	25	15	Red Sand	NA
28	35	7	Gray Sand	NA

## Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
8 5/8	28		0	60	60	Texas Pattern	NA	

## Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

## Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
 Address \_\_\_\_\_  
 Plugging Method \_\_\_\_\_  
 Date Well Plugged \_\_\_\_\_  
 Plugging approved by: \_\_\_\_\_

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received April 6, 1981

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

File No. RA-6775-EObservation \_\_\_\_\_ Location No. 17S.26E.12.1224

[illegible]

RECEIVED  
MAR 06 1985  
OIL CONSERVATION DIVISION  
SANTA FE

STATE ENGINEER OFFICE  
ROSWELL, N.M.

81 APR 6 AM 8 03

Clyde J. Tidwell  
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All questions, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1, 2, and Section 3 need be completed.

Table III-3  
North Colony Landfarm  
First Quarter Groundwater Monitoring Results  
(Sampled 11-1-82 and 12-1-82)

Parameter	Unit	Well Number			
		<u>31</u> upgradient	<u>32</u> downgradient	<u>33</u> downgradient	<u>34</u> downgradient
<u>Indicator</u>					
pH	Std. Units	7.31*	7.41	7.41	7.30
Specific Conductance	umho/cm	2545*	2693	3590	2563*
Total Organic Carbon	mg/l	63*(49)	240(8)	625(14)	25(64)
Total Organic Halogen	mg/l	0.042*	0.102	0.065	0.026
Total Dissolved Solids	mg/l	1434	2014	2812	1684
<u>Groundwater Quality</u>					
Chloride	mg/l	89(105)	116(125)	163(170)	173(180)
Iron	mg/l	0.06	<0.01	<0.01	1.81
Manganese	mg/l	1.08	0.311	0.521	0.567
Phenols	mg/l	<0.001	<0.001	<0.001	<0.001
Sodium	mg/l	100(86)	35.4(36)	44.4(39)	88.5(92)
Sulfate	mg/l	423(540)	1049(1120)	1428(1310)	613(430)
<u>Primary Drinking Water</u>					
Arsenic	mg/l	<0.01	<0.01	<0.01	<0.01
Barium	mg/l	0.1	<0.1	<0.1	0.1
Cadmium	mg/l	<0.001	<0.001	<0.001	<0.001
Chromium	mg/l	<0.001	<0.001	<0.001	0.004
Fluoride	mg/l	1.15	1.28	2.70	1.28
Lead	mg/l	0.002	0.001	0.001	0.005
Mercury	mg/l	<0.0004	<0.0004	<0.0004	<0.0004
Nitrate (as N)	mg/l	0.1	0.1	<0.1	<0.1
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01
Silver	mg/l	<0.01	<0.01	<0.01	<0.01
Pesticides & Herbicides	--	ND	ND	ND	ND
Radioactivity		samples not analyzed due to high TDS			
Turbidity	Jackson Units	75	40	30	190
Coliform	col/100 ml	1	200	1	200,000

\* average of four replicates

values in parentheses are the results of resampling (12-1-82) and reanalysis.



Table III-4  
North Colony Landfarm  
Second Quarter Groundwater Monitoring Results  
(Sampled 2-24-83)

Parameter	Unit	Well Number			
		<u>31</u> upgradient	<u>32</u> downgradient	<u>33</u> downgradient	<u>34</u> downgradient
<u>Indicator</u>					
pH	Std Units	7.0	6.7	6.8	7.1
Specific Conductance	umho/cm	2135*	2300	3030	1900
Total Organic Carbon	mg/l	88*	10	20	20
Total Organic Halogen	mg/l	0.038*	0.037	0.017	0.043
Total Dissolved Solids	mg/l	1810	3290	2790	1510
<u>Groundwater Quality</u>					
Chloride	mg/l	120	150	150	140
Iron	mg/l	0.88	0.09	0.30	0.03
Manganese	mg/l	1.5	0.439	0.234	0.260
Phenols	mg/l	0.006	<0.001	0.001	0.005
Sodium	mg/l	81	33	40	43
Sulfate	mg/l	690	990	1450	440
<u>Primary Drinking Water</u>					
Arsenic	mg/l	<0.01	<0.01	<0.01	<0.01
Barium	mg/l	0.2	<0.1	<0.1	0.1
Cadmium	mg/l	<0.001	<0.001	<0.001	<0.001
Chromium	mg/l	0.002	0.004	0.002	0.001
Fluoride	mg/l	1.3	1.7	3.5	1.4
Lead	mg/l	<0.001	<0.001	<0.001	<0.001
Mercury	mg/l	<0.0004	<0.0004	<0.0004	<0.0004
Nitrate (as N)	mg/l	<0.1	<0.1	<0.1	<0.1
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01
Silver	mg/l	<0.01	<0.01	<0.01	<0.01
Pesticides & Herbicides	--	ND	ND	ND	ND
Radioactivity		samples not analyzed due to high TDS			
Turbidity	Jackson Units	175	40	110	75
Coliform	col/100 ml	<1	1	1	1

\* average of four replicates

Table III-5  
North Colony Landfarm  
Third Quarter Groundwater Monitoring Results  
(Sampled 7-14-83)

Parameter	Unit	Well Number			
		<u>31</u> upgradient	<u>32</u> downgradient	<u>33</u> downgradient	<u>34</u> downgradient
<u>Indicator</u>					
pH	Std Units	7.56*	7.59	7.46	7.47
Specific Conductance	umho/cm	3040*	3900	5100	2400
Total Organic Carbon	mg/l	37*	14	21	25
Total Organic Halogen	mg/l	<0.05*	0.184	0.748	0.336
Total Dissolved Solids	mg/l	2130	2730	3570	1680
<u>Groundwater Quality</u>					
Chloride	mg/l	130	200	200	140
Iron	mg/l	<0.01	0.32	0.74	0.09
Manganese	mg/l	0.814	0.335	0.165	0.085
Phenols	mg/l	<0.001	<0.001	<0.001	<0.001
Sodium	mg/l	86	37	40	61
Sulfate	mg/l	520	1000	1480	330
<u>Primary Drinking Water</u>					
Arsenic	mg/l	<0.01	<0.01	<0.01	<0.01
Barium	mg/l	0.1	<0.1	<0.1	0.1
Cadmium	mg/l	<0.001	<0.001	<0.001	<0.001
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001
Fluoride	mg/l	0.82	1.1	2.5	1.0
Lead	mg/l	0.003	0.003	0.005	0.003
Mercury	mg/l	<0.0004	<0.0004	<0.0004	<0.0004
Nitrate (as N)	mg/l	<0.1	<0.1	0.1	0.3
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01
Silver	mg/l	<0.01	<0.01	<0.01	<0.01
Pesticides & Herbicides	--	ND	ND	ND	ND
Radioactivity		samples not analyzed due to high TDS			
Turbidity	Jackson Units	75	40	220	40
Coliform	col/100 ml	1	1	1	1

\* average of four replicates

Table III-6  
North Colony Landfarm  
Fourth Quarter Groundwater Monitoring Results  
(Sampled 10-3-83)

Parameter	Unit	Well Number			
		<u>31</u> upgradient	<u>32</u> downgradient	<u>33</u> downgradient	<u>34</u> downgradient
<u>Indicator</u>					
pH	Std Units	7.40	7.44	7.82	7.36
Specific Conductance	umho/cm	2076	2120	2680	1710
Total Organic Carbon	mg/l	26*	12	20	75
Total Organic Halogen	mg/l	0.063*	0.077	0.321	0.044
Total Dissolved Solids	mg/l	1730	2050	1670	1580
<u>Groundwater Quality</u>					
Chloride	mg/l	150	210	210	150
Iron	mg/l	0.77	0.30	1.2	0.28
Manganese	mg/l	1.99	0.502	0.272	0.115
Phenols	mg/l	<0.001	<0.001	<0.001	<0.001
Sodium	mg/l	85	43	44	62
Sulfate	mg/l	520	1010	1400	260
<u>Primary Drinking Water</u>					
Arsenic	mg/l	<0.01	<0.01	<0.01	0.02
Barium	mg/l	<0.1	<0.1	<0.1	<0.1
Cadmium	mg/l	<0.001	<0.001	<0.001	<0.001
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001
Fluoride	mg/l	0.9	1.1	2.4	1.0
Lead	mg/l	0.006	0.006	0.007	0.006
Mercury	mg/l	<0.0004	<0.0004	<0.0004	<0.0004
Nitrate (as N)	mg/l	<0.1	<0.1	<0.1	<0.1
Selenium	mg/l	<0.01	0.01	0.01	<0.01
Silver	mg/l	<0.01	<0.01	<0.01	<0.01
Pesticides & Herbicides	--	ND	ND	ND	ND
Radioactivity		samples not analyzed due to high TDS			
Turbidity	Jackson Units	123	26	19	88
Coliform	col/100 ml	1	1	1	1

\* average of four replicates

Table III-7  
Sample Means for All Monitoring Parameters  
Through Fourth Quarter

Parameter	Unit	Well Number			
		<u>31</u> upgradient	<u>32</u> downgradient	<u>33</u> downgradient	<u>34</u> downgradient
<u>Indicator</u>					
pH	Std Units	7.39	7.29	7.37	7.31
Specific Conductance	umho/cm	2535	2753	3600	2143
Total Organic Carbon	mg/l	53	57	140	42
Total Organic Halogen	mg/l	0.048	0.100	0.288	0.112
Total Dissolved Solids	mg/l	1776	2529	2711	1614
<u>Groundwater Quality</u>					
Chloride	mg/l	119	160	179	157
Iron	mg/l	0.43	0.18	0.56	0.55
Manganese	mg/l	1.35	0.40	0.30	0.26
Phenols	mg/l	0.002	0.005	0.001	0.002
Sodium	mg/l	88	37	41	101
Sulfate	mg/l	539	1034	1414	415
<u>Primary Drinking Water</u>					
Arsenic	mg/l	0.005	0.005	0.005	0.009
Barium	mg/l	0.10	0.05	0.05	0.10
Cadmium	mg/l	0.0005	0.0005	0.0005	0.0005
Chromium	mg/l	0.0009	0.0014	0.0009	0.0015
Fluoride	mg/l	1.04	1.30	2.78	1.17
Lead	mg/l	0.0029	0.0030	0.0030	0.0036
Mercury	mg/l	0.06	0.06	0.06	0.11
Nitrate (as N)	mg/l	0.005	0.006	0.006	0.005
Selenium	mg/l	0.005	0.006	0.006	0.005
Silver	mg/l	0.005	0.005	0.005	0.005
Endrin	mg/l	0.0001	0.0001	0.0001	0.0001
Lindane	mg/l	0.002	0.002	0.002	0.002
Methoxychlor	mg/l	0.05	0.05	0.05	0.05
Toxaphene	mg/l	0.0025	0.0025	0.0025	0.0025
2,4-D	mg/l	0.05	0.05	0.05	0.05
2,4,5-TP Silvex	mg/l	0.005	0.005	0.005	0.005
Turbidity	Jackson Units	112	31	95	98
Coliform	col/100 ml	0.5	50	0.5	50,000

\*Note: When analytical result reported as less than detection limit, value assumed to be one half of detection limit.



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

February 7, 1985

TONEY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

CERTIFIED MAIL -  
RETURN RECEIPT REQUESTED

Mr. Randall T. Hicks,  
Vice President  
Geoscience Consultants, Ltd.  
500 Copper Avenue, N.W.  
Suite 220  
Albuquerque, New Mexico 87102

Re: Ground Water Discharge Plan (GW-28) for Navajo  
Refinery, Artesia

Dear Mr. Hicks:

The New Mexico Oil Conservation Division Environmental Bureau has reviewed your December 7, 1984, discharge plan submittal for the Navajo Refinery. We have some comments and questions on the material submitted and requests for additional clarifying information. Also, in a meeting with you on January 24, 1985, several substantial issues regarding discharge plan coverage and future work efforts were raised. I will discuss these issues first and then provide our specific comments on the material submitted.

Discharge Plan Issues

- ✓ 1. During the meeting of January 24, 1985, the hydro-carbon product recovery system and its relationship to the ground water discharge plan was discussed. You requested that the issues remain separate except that water discharges from the recovery system to the conveyance ditch would be covered under the discharge plan. We are agreeable to your request to cover the product recovery system under WQCC Section 1-203 instead of WQCC Part 3 Regulations. However, such approval is contingent on your written assurance that you will comply with the provisions of Section 1-203.A., and your agreement that the existing compliance schedule or approval of the discharge plan will not exempt you from Section 1-203. If agreed to, use of Section 1-203 will be limited to past petroleum product discharges; action to be taken to

protect ground water in the event of future spills must be covered in the discharge plan.

2. The WQCC Regulations do not provide exemptions for discharges covered under the RCRA regulations. Therefore continuing discharges of RCRA-regulated effluent or leachate (such as to the land farming area) are also subject to the WQCC Regulations. If the RCRA land-farm disposal system is performing as designed to protect ground water from heavy metals and toxic organics, it is also likely to be protecting ground water from degradation by non-RCRA contaminants such as chlorides, sulfates and total dissolved solids regulated under WQCC rules. To demonstrate this Navajo must submit sufficient technical information on frequency of application, quantities, total volumes, conditions of application, monitoring currently performed, etc. This information will be reviewed for WQCC adequacy. If needed, additional analyses of samples for some key WQCC constituents may have to be performed as part of the discharge plan. Similar information also should be submitted for any RCRA approved site currently receiving discharges.
3. Demonstration that continued use of the 3-mile unlined conveyance ditch does not provide a hazard to ground water will be very difficult. This ditch transfers all refinery wastewater to the evaporation ponds, contains levels of benzene and other constituents in excess of WQCC standards (as evidenced by pond levels exceeding these standards), and contains other pollutants discharged from the oil-water separators. Information provided in the discharge plan indicates that a very shallow aquifer exists at depths between 15 and 30 feet beneath the refinery. At a specific conductance of about 2500 umhos/cm (Appendix B), the quality of this so-called "perched" aquifer is good and apparently has provided water for stock (p. 4-11). The potentiometric map (Figure 4-7) shows water movement to the east toward the river. The same geologic conditions and shallow useable ground water are likely to occur in the area of the ditch until the Pecos Valley alluvium is reached. This water must be protected from any ditch discharges that would cause exceedance of ground water standards. The contention (p. 6-2) that the ditch is self-lined due to deposition of asphaltic material has not been demonstrated and no information

on ground water quality along the ditch has been provided. Even if several monitoring wells along the 3-mile length showed no contamination, this would not be assurance that contamination is not occurring in between the monitoring points. The ditch is a possible line source of recharge and investigation of specific hydrologic conditions along its entire length would be time-consuming, expensive, and very possibly inconclusive. Navajo is strongly encouraged to look at other alternatives to the unlined ditch for transfer of effluent to the ponds.

4. Navajo should continue the hydrogeologic studies it is conducting in the vicinity of the evaporation ponds. Alternatives other than pond lining are available for discharge plan approval under Section 3-109.C. of the Regulations.

#### Specific Comments/Questions

##### HYDROGEOLOGY:

- ✓ 1. Are wells numbered 45, 46, and 47 the waste conveyance monitor wells referred to on p. 3-1?
- ✓ 2. Provide a table listing available information (location, owner, date drilled, depth, aquifer or water bearing zone, water level, date measured, use, etc.) for all water wells (except those drilled by Navajo) within one mile of the refinery property, one mile either side of the conveyance ditch, and within one mile of the evaporation ponds (on both sides of the river).
- ✓ 3. A statement on p. 4-1 asserts that Pecos Valley alluvium is not used for any purpose in "this area." What is the extent of the referenced area and what is the source of water for the windmill in the NW/4, SW/4 of Section 12, Township 17 South, Range 26 East, and the water well listed on Figure 4-9?
- ✓ 4. What is the source of information for the geologic map shown in Figure 4-1?
- ✓ 5. Provide a legible copy of Figure 4-2 and provide units for permeability and other listed soil characteristics.

- ✓ 6. Clarify whether the depth to the top of the Queen formation is 150 or 200 feet (p. 4-10).
- ✓ 7. The depth and aquifer designation for well 6612 is incorrectly drawn on Figure 4-3.
- ✓ 8. Describe the characteristics and extent of the Bower Sand shown on Figure 4-3. This sand was not discussed in the discharge plan submittal.
- ✓ 9. Several of the well records in Appendix A from the State Engineer's Office have critical information that is illegible. Provide legible logs or tabulate the critical information (eg. depth of well, depth to water upon completion, major water-bearing strata, etc.).
- ✓ 10. Logs for Navajo wells #2, 4 to 8, 10 and 11, 14 and 15, A to J, and the product recovery wells are missing. Provide the logs if available or a narrative on construction information, date, depth, use, etc.
- ✓ 11. The photocopies of the sample log for wells AA through AI, and R through T are illegible in part. Provide legible log copies.
- 12. What is the source of the apparent artesian head in the perched water unit and shown in Figure 4-6? Do all monitor wells near the refinery exhibit these apparent artesian conditions?
- ✓ 13. Is there any apparent source of recharge or discharge (pumping) that could account for the potentiometric anomalies described on p. 4-12 for wells #19 and 34 and 29, 37, 39 and 40?
- X 14. What is the hydrologic relationship of Eagle Draw to the perched shallow artesian zone?
- ✓ 15. Provide the conductance vs. discharge vs. relationship for the Pecos River near Artesia for October through April 1982 and 1983.
- ✓ 16. The potentiometric surface map at the evaporation ponds (Figure 4-9) shows ground water levels several feet above river elevations. Water movement to the north or south could be inferred from differences in these elevations. The time of year the measurements



were made was omitted from the figure. To determine what the actual situation is and verify the accuracy of the statement on p. 4-14 that the gradient is reversed at low flow, additional shallow subsurface information needs to be obtained. This should include comparison of seasonal water levels in the river with those in the pond monitoring wells. Frequent water level measurements by hand or through use of a water level recorder may be needed to make this determination. Seepage from the ponds producing a ground water mound may also contribute to high water levels in pond monitor wells.

17. Figure 4-9 shows water levels to be higher in pond 3 than in upstream pond 2. If the dike(s) has been breached, why are the levels unequal?
- X 18. Is Navajo's property boundary given by the heavy black line in Figure 4-9? If so, provide the names and show the locations of the property owners immediately adjacent to the ponds.
- X 19. Regarding the conveyance ditch, does Navajo own the ditch or have an easement? If an easement, provide the name and location of the property owners.
20. Provide a map showing the current 100-year flood plain at the refinery and the maximum 100-year flooding that could occur after the city makes changes in the Eagle Creek drainage. Indicate the status and proposed completion date of the flood control efforts (eg. planning only, money allocated, under construction).
- X 21. Figure 4-9 shows that dike levels at the ponds are 10 to 14 feet above the river rather than the 16 to 18 feet given on p. 4-15. Clarify this discrepancy.
22. On Figure 4-9, where is monitoring well #16 located? What are its completion details?
- Y 23. Provide the 100-year flood plan map in the vicinity of the end of the conveyance ditch and the ponds. Show on the map the 1932 flood stage of 17.4 feet and the 13.76 feet stage of 1954. Show the extent and frequency of the largest discharge expected under controlled discharge conditions. What precautions have been taken to protect the conveyance ditch and ponds from such releases?

WATER QUALITY:

1. Provide a summary of water quality characteristics of the San Andres and upper Queen aquifers in the refinery area.
2. Contrary to the statement on p.4-16, the water quality in the Pecos River Valley alluvial sand/silt aquifer has not yet been sufficiently characterized by Navajo. Background quality cannot be defined until seasonal variations, and ground water flow direction(s) are known. Since pond seepage appears to have affected some close monitoring wells, analyses of water samples from those wells would not be representative of the back- ground water quality.
3. Analyses of the Pecos River up and downstream of the ponds and at low flow should be made to characterize river quality and any effect of pond seepage on NM Stream Standards.
4. Which "well water" is referred to in the 4/30/81 CEP Analysis labeled "Page 1 of 13 pages?" Where is this well located? What are its depth and completion details? From what zone is it producing?
- X 5. On page 4-17, the statement is made that direct contamination of ground water at the refinery is unlikely due to the presence of artesian conditions and that contamination could be occurring due to contact between artesian water in the wellbore and hydrocarbons in the soil. While we believe this could be true for some individual wells, the presence of floating product up to several feet in thickness in at least ten of the wells, as shown in drilling logs, shows that product has indeed moved downward despite apparent artesian conditions. There is also the possibility that the artesian conditions are recent and localized, and contamination predated a rise in water levels and pressures to current elevations. This statement needs to be revised to reflect actual conditions.
- X 6. The last paragraph of page 4-17 asserts that the ground water of the shallow, perched-water unit is 1) of limited extent, 2) not utilized by any off-site wells, and 3) not connected with any other aquifer. Navajo has not conclusively demonstrated the correctness of these assertions (see issue 3 above).

Even if the situation is as Navajo suggests, this ground water is to be protected for present and potential future use since it can be used as a water supply and has an existing concentration much less than 10,000 mg/l TDS.

7. Provide TOC, Chloride, Sodium, and sulfate data for the TEL and colony areas (see Appendix B).
8. Although Navajo will provide additional effluent flow and quality characterization in the February 25, 1985 submittal, the following deficiencies were found in the December 7, 1984, submittal:
  - (a) Where were effluent rates measured? Flow measurements need to be made at the beginning and end of the ditch.
  - (b) No analysis was provided for waste stream #14 (Desulfurizers).
  - (c) Table 5-2 does not provide analyses for benzene, toluene, ethylbenzene, xylenes, or the other WQCC organic standards. The presence or likelihood of toxic pollutants has not been discussed.

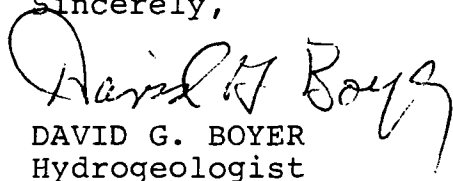
PLANT PROCESSES:

1. Are injection wells used for disposal of any produced water or any refinery generated wastewater?
2. In addition to the information provided in Section 5.3.1., provide additional information on the fire pond. Include engineering information (size, depth, volume, liner, discharge rates in and out), range of TDS and flow variation from individual boilers, and use of additives (chromates, phosphates, organics, etc). Provide information on uncontaminated ground water quality in the pond vicinity.
3. Discuss the TEL pond, its use, dates of use, type of effluents, closure procedures, and if it is under a RCRA monitoring plan. This information will be useful in interpretation of the subsurface hydrologic data.

4. Provide construction details for the oil-water separators. Provide residence times prior to sludge removal, frequency of sludge removal, and residence time after removal.
5. Describe the blending operations, additives used, and storage and drainage for this area.
6. In Table 5-2, indicate the type of chromium analysis performed. Is the analysis for CN listed in Table 5-2 for streams #3 and #9 in error?
7. Waste stream #18 is not on drawing 5-2 but an unnumbered waste stream is present on the drawing. Clarify the waste stream numbering.
8. Does Navajo have any underground storage tanks?

Please provide three copies of all future submittals (including maps and drawings), so that additional copies are available for field office use and public review. If you have any questions regarding these comments or the additional information requested, please contact me at the above address or by telephone at 827-5812.

Sincerely,

  
DAVID G. BOYER  
Hydrogeologist

cc: OCD Artesia Field Office  
NMEID Hazardous Waste Section  
David Griffin, Navajo Refining Co.  
Joel Carson, Losee, Carson & Dickerson

P 505 905 848

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	
Randall T. Hicks	
Street and No.	
500 Copper Ave N.W.	
P.O., State and ZIP Code	
Albq., N.M. 87102	
Postage	\$



MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone

☒ Personal

Time  
2:30 - 6 PM

Date  
1-24-85

Originating Party

Other Parties

Randy Hicks - Geoscience (Represent-  
ing Navajo Refinery)  
Subject

DAVE BOYER o/s  
Phil Baca o/s

Discharge Plan for Navajo Artesia

Discussion

Phil & I reviewed with Randy our comments on the DP - "Nuts & Bolts" discussed first (omitted details, unreadable logs, etc). Issues on cleanup & land farming discussed next. If possible, Navajo would like to show that shallow water underpools ~~is~~ is greater than 10,000 TDS and moves into & out of river. If ~~is~~ and if water is in river in water below shallow zone, ponds may be OK. They propose 3 or 4 additional monitoring wells for lithologic info, water levels & LQ. I said that type of demonstration was OK. Regarding the ditch, they propose one monitoring well between to plant & ponds & contend that there

Conclusions or Agreements

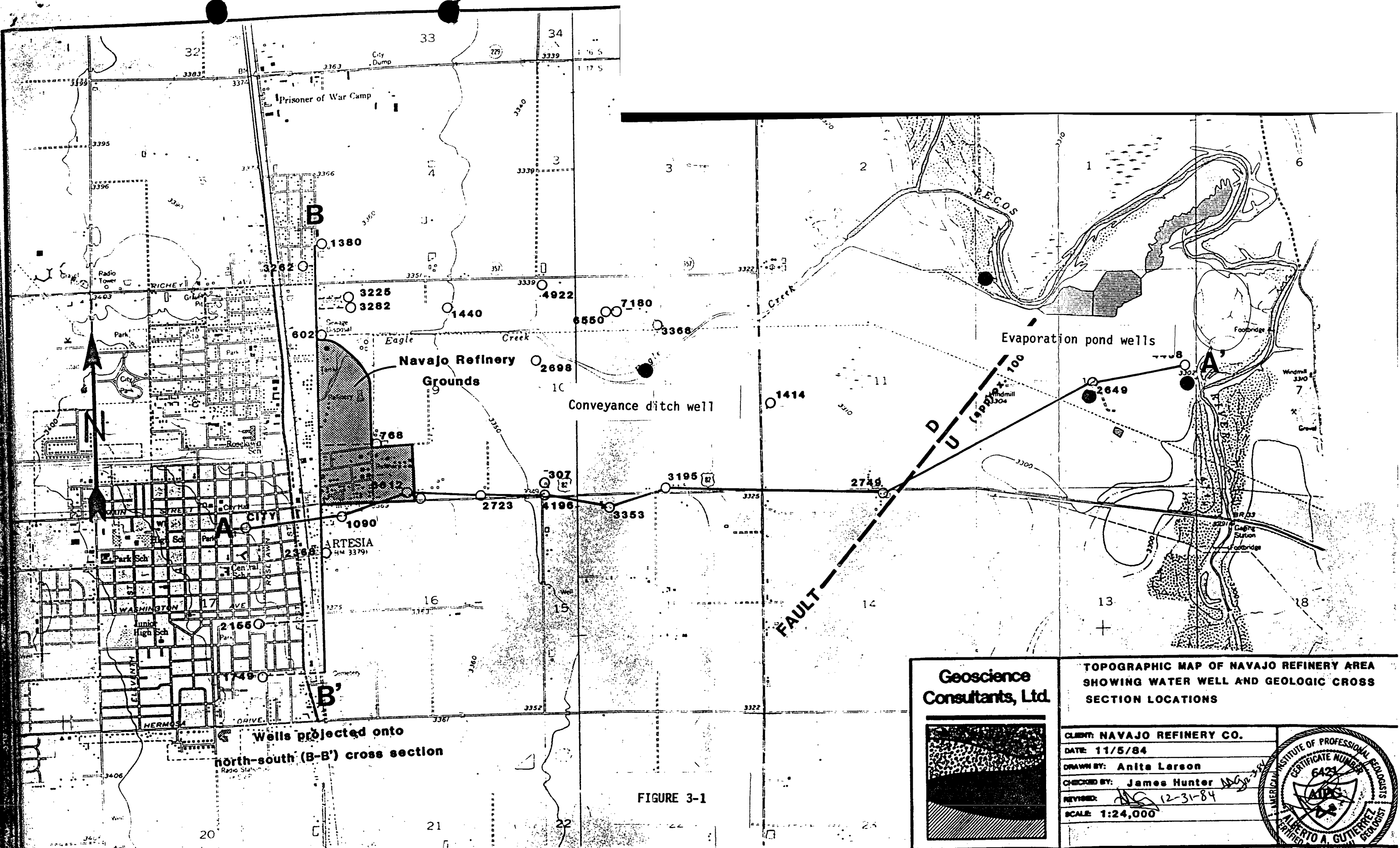
Unresolved issues include cleanup under 3-103 or DP, land farming under RCRA only, and lined vs unlined ditch. is no evidence of leakage and the geology (containing zone) is continuous. I told Randy that it would be a difficult demonstration but I was not prepared to say <sup>instead</sup> now what would be needed. I suggested a pipeline.

Distribution

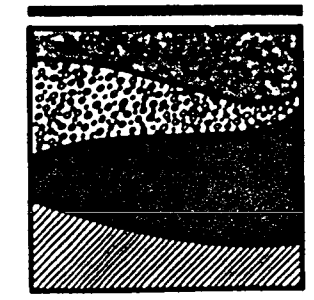
Navajo Refinery file.

Signed

Dave H. Boyer

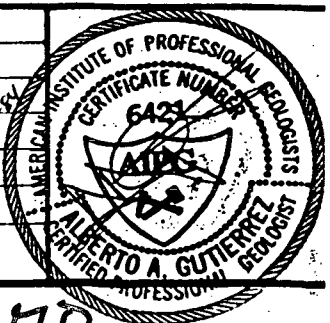


Geoscience  
Consultants, Ltd.



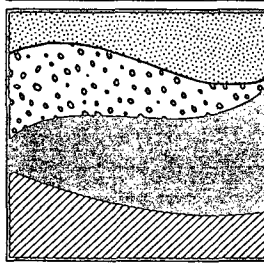
TOPOGRAPHIC MAP OF NAVAJO REFINERY AREA  
SHOWING WATER WELL AND GEOLOGIC CROSS  
SECTION LOCATIONS

CLIENT: NAVAJO REFINERY CO.  
DATE: 11/5/84  
DRAWN BY: Anita Larson  
CHECKED BY: James Hunter  
REVISED: 12-31-84  
SCALE: 1:24,000



REV 1/24/85 WJR

Geoscience  
Consultants, Ltd.



DIL CONSERVATION DIVISION

DEC 11 1984

RECEIVED

December 7, 1984

Mr. Richard L. Stamets  
Oil Conservation Division, Room 206  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

RE: Submission of Hydrogeology and Process Description Report

Dear Mr. Stamets:

Navajo Refining Company and Geoscience Consultants, Ltd. are pleased to submit Sections 1.0 - 6.0 of the ground water discharge plan for Navajo Refining Company's Artesia, New Mexico facility. This document contains the detailed report on site hydrogeology and process descriptions pursuant to the schedule contained in the permission to discharge without an approved plan dated September 19, 1984.

Pursuant to the schedule contained in your September 19, 1984 letter, OCD shall provide Navajo (and Geoscience Consultants, Ltd.) with comments on this submission on or before February 7, 1985. We do request, however, that your staff contact us as questions or comments arise so that we can address them in the most timely fashion.

If you have any questions please contact me at our Albuquerque office.

Sincerely,  
GEOSCIENCE CONSULTANTS, Ltd.

Randall T. Hicks  
Vice President

Enclosure

cc. Mr. David Griffin, Navajo  
Mr. Joel Carson, Esq., Losee, Carson and Dickerson  
Mr. David Boyer, NMOCD, w/o enclosure



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

September 19, 1984

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Joel M. Carson, Esq.  
Losee, Carson & Dickerson  
Attorneys at Law  
P.O. Drawer 239  
Artesia, New Mexico 88211-0239

Re: Discharge Plan for Navajo  
Refinery

Dear Mr. Carson:

By letter dated August 21, 1984, the Oil Conservation Division granted an extension of time until October 3, 1984, to Navajo Refining Company for submission of a ground water discharge plan for its Artesia refinery. The letter also stated that if further extensions of time were to be needed, Navajo should submit a description of the work needing to be done to complete the discharge plan together with a time schedule for plan submission. On September 13, 1984, Geoscience Consultants, Ltd., consultants to Navajo, submitted a request for a further extension of time together with a description of proposed work and a timetable for submission of discharge elements to OCD for review. Following a meeting on September 17, between OCD, Navajo officials, their attorney and consultant, a slightly revised work schedule was submitted to OCD on September 18.

Pursuant to Section 3-106.A. of the New Mexico Water Quality Control Commission Regulations and for good cause shown, Navajo Refining Company is hereby granted an extension of time until June 17, 1985, to submit a final discharge plan to OCD for review. Further, Navajo is granted approval until December 19, 1985 to discharge without an approved discharge plan. This extension is granted with the condition that the deadlines for Navajo's submittals to OCD (as shown in the attached development and implementation schedule) are met. Also, if a public hearing



is needed on the proposed discharge plan, an additional extension will be granted consistent with the timeframe of any public hearing.

If you have any questions concerning this extension, please contact me at the above address or at 827-5804.

Sincerely,

RICHARD L. STAMETS  
Acting Director

RLS/DB/dp

cc: Paul Biderman, Secretary, EMD  
David Griffin, Navajo Refining Co.  
Alberto Gutierrez, Geoscience Consultants

Enc.

P 505 905 729

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	
Joel M. Carson	
Street and No.	
Losee, Carson & Dickers	
P.O. Box 239	
P.O., State and Zip Code	
Artesia, N. M. 88211-02	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, Feb. 1982

SCHEDULE FOR DEVELOPMENT AND  
IMPLEMENTATION OF WASTEWATER MANAGEMENT PLAN  
NAVAJO REFINERY, ARTESIA, NEW MEXICO

DATE	ACTION ITEM
September 14, 1984	Navajo submits to OCD the justification for extension to discharge without an approved plan pursuant to schedule of compliance and the preliminary discharge plan outline.
September 17, 1984	Meet with OCD to finalize schedule of compliance pursuant to justification.
December 7, 1984	Navajo submits detailed report on geohydrology and process description to OCD.
No later than February 7, 1985	Navajo receives comments from OCD on December 7 submission.
February 25, 1985	Navajo submits report on effluent flow and chemical characteristics of waste streams which will be regulated by the OCD plan.
No later than April 22, 1985	Navajo receives comments from OCD on February 25 submission.
June 17, 1985	Navajo submits final wastewater management plan to OCD for review. Plan includes design of waste management system and response to OCD comments on previous submissions.
June 21, 1985	Publication of Public Notice by OCD.
July 22, 1985	Public comment period expires.
No later than August 19, 1985	Navajo receives any comments of OCD on final discharge plan.

October 18, 1985

Navajo responds to OCD  
comments.

December 19, 1985

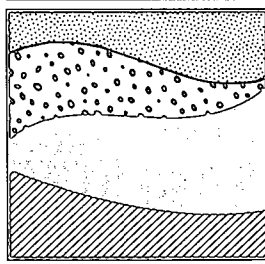
OCD decision on discharge plan  
approval

Date as provided by  
approved discharge plan

Navajo submits plans and  
specifications for any  
new construction for waste  
management system. Construc-  
tion of any facilities begins  
pursuant to schedule in  
approved plan.

This schedule of compliance depends on prompt OCD response to Navajo's timely submissions. Delays in receipt or specificity of OCD comments may result in delays in subsequent submissions from Navajo to OCD.

Geoscience  
Consultants, Ltd.



September 17, 1984

Dave Boyer  
NM Oil Conservation Division, Rm 206  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

Dear Dave:

Pursuant to the OCD/Navajo/Geoscience meeting this morning, the changes in the schedule of compliance have been incorporated into the final document.

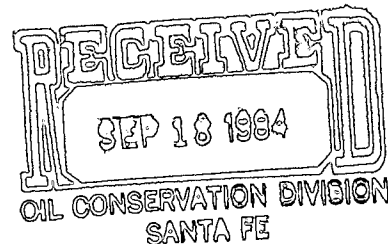
Thanks for your assistance with this matter.

Sincerely,

Randall T. Hicks

Enclosure

cc. Mr. David Griffin, Navajo  
Mr. Joel Carson, Esq.



SCHEDULE FOR DEVELOPMENT AND  
IMPLEMENTATION OF WASTEWATER MANAGEMENT PLAN  
NAVAJO REFINERY, ARTESIA, NEW MEXICO

DATE	ACTION ITEM
September 14, 1984	Navajo submits to OCD the justification for extension to discharge without an approved plan pursuant to schedule of compliance and the preliminary discharge plan outline.
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October 18, 1985

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comments.

December 19, 1985

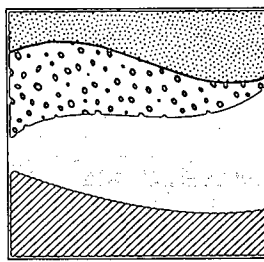
OCD decision on discharge plan  
approval

Date as provided by  
approved discharge plan

Navajo submits plans and  
specifications for any  
new construction for waste  
management system. Construc-  
tion of any facilities begins  
pursuant to schedule in  
approved plan.

This schedule of compliance depends on prompt OCD response to Navajo's timely submissions. Delays in receipt or specificity of OCD comments may result in delays in subsequent submissions from Navajo to OCD.

Geoscience  
Consultants, Ltd.



September 13, 1984

RECEIVED

SEP 14 1984

OIL CONSERVATION DIVISION

Mr. Joe Ramey,  
Director  
NM Oil Conservation Division, Room 206  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

RE: Schedule of Compliance - Navajo Refining Company (Artesia Facility)

Dear Mr. Ramey:

Pursuant to your letter of September 4, 1984, we are submitting the enclosed schedule of submissions (Attachment 1) and basic outline for an wastewater management plan (Attachment 2), if, indeed, Navajo is required to have a discharge plan. Over the years Navajo has made a good faith effort to work with the OCD in protecting ground water at the Artesia refinery. Navajo has, at OCD's request, voluntarily installed over 50 ground water monitoring wells at the facility. Navajo also has had a program to help insure that the soil and water are not degraded from the usage of this site which has been a refinery for over 40 years.

It is obvious from the work done to date that Navajo has gone to great lengths to assure the OCD that Navajo is not degrading potable ground water. We feel that the enclosed schedule will result in an adequate wastewater management plan if the division determines that a discharge plan is required. We would like to meet with OCD technical staff on September 17, to insure that timely responses to our submissions are provided in any agreement between Navajo and OCD.

It is apparent from Navajo's past efforts to protect the environment and the timely response to your letter that good cause is shown for an extension of time (pursuant to the enclosed schedule) to submit a complete wastewater management plan for the Artesia Refinery.

If you have any questions or comments concerning this submission please contact me or Alberto A. Gutierrez, President at our Albuquerque office. Copies of all correspondence concerning this plan should be addressed to Geoscience Consultants, Ltd. with copies sent to the following addresses.

Mr. David Griffin  
Navajo Refining Co.  
P.O. Drawer 159  
Artesia, New Mexico 88210

Mr. Joel Carson, Esq.  
Losee, Carson and Dickerson  
P.O. Drawer 239  
Artesia, New Mexico 88210

Yours Truly,  
GEOSCIENCE CONSULTANTS, LTD.

Randall T. Hicks  
Vice President  
*Randall T. Hicks*  
Enclosure *PH*  
RTH/pg

cc: David Griffin, Navajo  
J. Carson, LC&D  
Dave Boyer, OCD



PRELIMINARY OUTLINE FOR WASTEWATER MANAGEMENT PLAN  
NAVAJO REFINING COMPANY  
ARTESIA, NEW MEXICO

1.0 EXECUTIVE SUMMARY

2.0 LOCATION AND PHYSIOGRAPHIC FEATURES

3.0 BRIEF HISTORY OF OPERATION

4.0 PROCESS DESCRIPTION

5.0 DESCRIPTION OF PHYSICAL ENVIRONMENT AT SITE

5.1 GEOLOGY

5.2 GEOMORPHOLOGY AND SOILS

5.3 SURFACE WATER HYDROLOGY AND FLOODING POTENTIAL

5.4 GROUND WATER HYDROLOGY AND WATER QUALITY

6.0 WASTE MANAGEMENT SYSTEM

6.1 BRIEF DESCRIPTION OF SYSTEMS REGULATED BY AND PERMITTED  
UNDER RCRA

6.2 DESCRIPTION OF SYSTEMS REGULATED BY OCD AND TO BE PER-  
MITTED UNDER DISCHARGE PLAN

6.3 WASTE STREAM CHARACTERIZATION (OF WASTE STREAMS  
REGULATED BY OCD & WQCC REGULATIONS ONLY)

7.0 MONITORING AND REPORTING PLAN

8.0 CONTINGENCY PLANS

APPENDICES

A HYDROGEOLOGICAL AND SOILS DATA

B PROCESS DATA

C WASTE CHARACTERIZATION AND ANALYTICAL DATA

D DESCRIPTION OF RCRA PART A AUTHORIZATION AND PART B APPLICATION  
PROCESS

E PLANS AND SPECIFICATIONS OF WASTE MANAGEMENT SYSTEM (SUBMITTED  
AFTER PLAN APPROVAL)

SCHEDULE FOR DEVELOPMENT AND  
IMPLEMENTATION OF WASTEWATER MANAGEMENT PLAN  
NAVAJO REFINERY, ARTESIA, NEW MEXICO

DATE	ACTION ITEM
September 17, 1984	Navajo submits to OCD the justification for extension to discharge without an approved plan pursuant to schedule of compliance and the preliminary discharge plan outline.
September 21, 1984	Meet with OCD to finalize schedule of compliance pursuant to justification.
December 7, 1984	Navajo submits detailed report on geohydrology and process description to OCD.
February 7, 1985	* Navajo reviews comments from OCD on December 7 submission.
February 25, 1985	Navajo submits report on effluent flow and chemical characteristics of waste streams which will be regulated by the OCD plan.
April 22, 1985	* Navajo reviews comments from OCD on February 25 submission.
June 17, 1985	Navajo submits final wastewater management plan to OCD for review. Plan includes design of waste management system.
June 21, 1984	Publication of Public Notice by OCD.
July 21, 1985	Public comment period expires.
August 19, 1985	* Navajo reviews any comments of OCD on final discharge plan and plan is approved by OCD.

\* Last date OCD could have comments back to Navajo

Oct 19, 1985

Navajo final response to OCD comments

Plan approval or denial within 60 days after 10-19-85

Date as provided by  
approved discharge plan

Navajo submits plans and  
specifications for any  
new construction for waste  
management system. Construc-  
tion of any facilities begins  
pursuant to schedule in  
approved plan.

This schedule of compliance depends on prompt OCD response to Navajo's timely submissions. Delays in receipt or specificity of OCD comments may result in delays in subsequent submissions from Navajo to OCD.



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

September 4, 1984

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Mr. Joel Carson  
Losee, Carson & Dickerson  
Attorneys at Law  
Post Office Drawer 239  
Artesia, New Mexico 88211-0239

Dear Mr. Carson:

Enclosed is a report compiled by David Boyer regarding the Navajo Refinery discharge plan.

I am in agreement with Mr. Boyer's suggestion that if you do need an extension beyond October 3, 1984, you should meet with this Division and try to arrange a schedule for the submittal of the discharge plan.

Yours very truly,

A handwritten signature in dark ink, appearing to read "Joe D. Ramey", written over the typed name.

JOE D. RAMEY  
Director

JDR/fd

enc.



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

August 28, 1984

MEMORANDUM

TO: JOE D. RAMEY, DIRECTOR

FROM: DAVID BOYER, HYDROGEOLOGIST *DB*

SUBJECT: NAVAJO REFINERY PERMITTING STATUS

I have reassembled the file on the above facility and have prepared the attached chronology of events based on material currently in the file. Since there is a long gap in correspondence, I too believe some material is missing. However, the file does show a long record of delays by Navajo in submittal of discharge plan information and several extensions of time granted by this division for plan submittal.

If Navajo needs a further extension of time beyond October 3, 1984, to file a discharge plan, my recommendation is that OCD and Navajo meet prior to that date to discuss and agree upon a rigid schedule for submission (and OCD review) of the various discharge plan elements. This compliance schedule would be similar to an "assurance of discontinuance" but not requiring any Water Quality Control Commission action. If a further extension is needed an extension of time to operate as well as an extension for discharge plan submittal should be granted to keep the facility in compliance with WQCC Regulation 3-106.A.

CHRONOLOGY OF PERMITTING ACTIVITIES  
NAVAJO REFINERY, ARTESIA, NEW MEXICO

APRIL 29, 1980	Letter from Joe Ramey, OCD Director, to Navajo Refinery Company requesting the filing of a "discharge plan within 120 days of receipt of this notice."
AUGUST 22, 1980	Letter from Ramey to David G. Griffin, Environmental Coordinator, Navajo Refining Company, notifying Navajo that they have failed to file the discharge plan by August 25, 1980, (the last day of the 120-day period).
SEPTEMBER 25, 1980	Letter from Joel M. Carson, of Losee, Carson and Dickerson, attorneys for Navajo, explaining the failure to file a discharge plan, and requesting an extension of time of 90 days from August 25, 1980 to make the filing.
OCTOBER 1, 1980	Letter from Ramey to Carson granting an extension of time until November 24, 1980, for discharge plan submittal, with the provision that Navajo submit a progress report to OCD on October 15, 1980.
OCTOBER 15, 1980	Letter from Griffin of Navajo to Ramey providing the discharge plan progress report.
NOVEMBER 20, 1980	Letter from Griffin to Ramey (which included discharge report and attachments) stating that it is Navajo's intention to show that waste water is not discharged to either the shallow aquifer below the evaporation ponds or the Pecos River.

DECEMBER 3, 1980

Letter from Thomas A. Parkhill, OCD hydrogeologist, to Griffin containing comments on the discharge plan, including a statement that the plan is incomplete, and suggesting possible improvements in the waste water treatment system. Parkhill also requests that modification of the plan be submitted by February 2, 1981, and states that no further discharges will be allowed if an acceptable plan is not received by that date.

DECEMBER 12, 1980

Letter from Carson to Dick Stamets, OCD Technical Support Chief, stating that November 20, 1980, discharge report was not a request for discharge plan approval but was to "be considered as proof that Navajo was not required to file an application for a discharge plan". Also, Navajo contended that waste water does not contaminate any fresh water source and they are not subject to any filing requirements.

FEBRUARY <sup>4</sup>~~12~~, 1981

Letter from Carson to Ramey requesting an extension of time of ninety days to submit additional data as proof Navajo is not contaminating any fresh water aquifer.

FEBRUARY 9, 1981

Letter from Ramey to Carson granting Navajo an extension of time for discharge plan submission until May 15, 1981.

MAY 13, 1981

Letter from Carson to Ramey requesting a further, unspecified, extension of time for filing of information relating to the discharge for the Navajo ponds.

MAY 27, 1981

Letter from Ramey to Navajo granting an extension of time for discharge plan filing until August 19, 1981.

OCTOBER 20, 1981

Letter from Carson to Ramey requesting an extension of time for information submittal until December 15, 1981, because of consultant illness.

NOVEMBER 16, 1981 Letter from Ramey to Navajo stating that Navajo must submit a discharge plan since Navajo has not submitted satisfactory evidence to the contrary. The letter grants an extension until January 15, 1982, to submit a discharge plan, and further states this is the last extension to be granted and that OCD "will take appropriate measures to prevent any discharge" from the plant.

UNDATED Draft "Application for Wastewater Discharge Permit" from Navajo Refining Company (thought to be submitted late 1981 or early 1982).

DECEMBER 9, 1982 Submittal to OCD by Hydro Science Engineers of Las Cruces of a review of the draft Navajo discharge permit application.

FEBRUARY 21, 1983 Letter from Griffin to Oscar Simpson for OCD stating that Navajo is pursuing the development of a new discharge plan which would combine some effluent with the City of Artesia's treatment plant effluent for reuse as park irrigation water.

MARCH 19, 1983 Submittal by Hydro Science Engineers of a report "Requirements for Application for Discharge Plan Approval for Navajo Refining Company, Artesia, New Mexico".

APRIL 3, 1984 Letter from Ramey to Navajo requesting a formal discharge plan to cover all discharge of effluent at or adjacent to the plant site, and granting a 120-day time period from receipt of the letter to submit the plan.

(NOTE: No correspondence from OCD to Navajo was found for the period between November 16, 1981 and April 3, 1984)



MAY 25, 1984

Letter from Griffin to Ramey returning  
OCD's files after attempting to re-  
assemble them stating that documents  
are still missing.

JULY 20, 1984

Letter from Carson to Ramey requesting  
an unspecified extension of time to re-  
complete filing of the material lost.

AUGUST 21, 1984

Letter from Ramey to Carson granting an  
extension of time until October 3, 1984  
to file a discharge plan, and suggest-  
ing that, if further extensions are  
needed, Navajo advise Division of what  
tests are necessary and furnish a time  
schedule for completion.

Compiled by D. Boyer  
August 22, 1984



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

August 21, 1984

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Joel M. Carson  
Losee, Carson & Dickerson  
Attorneys at Law  
P. O. Drawer 239  
Artesia, New Mexico 88211-0239

Dear Mr. Carson:

On July 23, 1984, we received your letter requesting an extension of time for the filing of a discharge plan for the Navajo Refinery at Artesia. The time for filing the plan was August 3, 1984.

An extension of two months, until October 3, 1984, is hereby granted.

If further extensions are needed, it would be my suggestion that you advise the Division of exactly what further tests are necessary and furnish a time schedule for completing the work.

Yours very truly,

JOE D. RAMEY  
Director

JDR/fd

8/16/84 - Phone Call from Ready Hicks of Geoscience  
consultants  
(Notes of Dave Boyer)

Have not yet been retained, but are  
preparing proposal for Nov 10 - 90% certain  
of working for them

Scope of work (proposed)

- ① Geohydrology - GW, SW, Soils, Flooding potential, Vadose zone

② Process description - "sour" Crude  
Response & "Sweet" Crude - different  
if Response processes with differing char.

③ Definition of Effluent Char. - Flow chemistry & variations (including <sup>remot.</sup> keeping)

RCRA § 2 Gasoline Reservoir

Land Farm - 2 by Eagle Bros.

③ Cooling tower blowdown <sup>to unlined pond at site</sup>

Wastewater Management system options  
One proposal (B) would be selected for submittal  
B Oct 18

late summer 85? (5) Design of system, submission of plans and specs.

\* OGD would look at, incorporate into DP, and add further ground water protection measures (e.g. GDS) if necessary - would not dual permit

LAW OFFICES

LOSEE, CARSON & DICKERSON, P. A.

300 AMERICAN HOME BUILDING

P. O. DRAWER 239

ARTESIA, NEW MEXICO 88211-0239

A. J. LOSEE

JOEL M. CARSON

CHAD DICKERSON

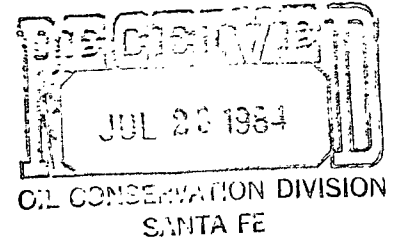
DAVID R. VANDIVER

AREA CODE 505

746-3508

20 July 1984

Mr. Joe Ramey, Director  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501



Dear Mr. Ramey:

Some time ago Navajo Refining Company made a filing with the Department concerning an application for permit to discharge at its Artesia Refinery. This filing was never acted upon by the Department and the data which was collected by Navajo to support the filing had been loaned by some of the departmental personnel to a firm in Albuquerque and had never been returned.

After meeting with you and Mr. Stamets, we have tried to complete your original file from copies held by Navajo. Navajo is also in the process of making further tests and collecting other data to meet some of the requirements you specified at our meeting.

Navajo requests an extension of time to re-complete its filing and refile the data already filed with the Department, but lost, and the necessary data to convince your Department that Navajo does not need a permit to discharge, or, in the alternative, that Navajo is entitled to a five year discharge permit.

Yours truly,

LOSEE, CARSON & DICKERSON, P.A.

  
Joel M. Carson

JMC:bjk

cc: Mr. Henry L. Stern  
Mr. Jack P. Reid  
Mr. Dewie O. Stevenson

Memorandum

June 22, 1984

To: Joe D. Roney, Director

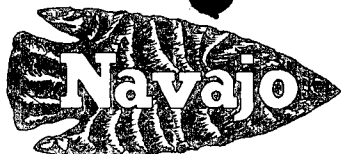
From: Oscar D. Simpson III, Water Resource Specialist

Subject: Submittal of duplicate  
copies pertaining to Hydro Science  
Engineers, Inc.

As you indicated on June 15, 1984 that  
information and reports prepared by Hydro  
Science Engineers, Inc. couldn't be found  
in OCD files, Hydro Science has forwarded  
you with complementary copies of their work  
(copies attached to this memo)

All material and  
references placed  
in file  
AVB 8/17/87

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
(910) 986-0990

May 25, 1984

Mr. Joe Ramey, Director  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

We are hereby returning your file on Navajo Refining Company. Per your request, we have done our best to reassemble the file. We have attempted to replace all the missing documents of which we are aware; however, it is obvious that there are still documents missing.

Very truly yours,

David G. Griffin  
Superintendent of Environmental  
Affairs and Quality Control

DGG/jh

Enclosure



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

April 3, 1984

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

Re: Request for Discharge Plan

Gentlemen:

This office has had a draft "Application for Wastewater Discharge Permit" on file for something over two years. Since no action has been taken and since the draft is incomplete, we now request a formal discharge plan.

Under provisions of the regulations of the Water Quality Control Commission you are hereby notified that the filing of a discharge plan for your Artesia Refinery (Section 9, Township 17 South, Range 26 East) is required. Discharge plans are defined in Section 1-101.1 of the regulations and a copy of the regulations is enclosed for your convenience.

This plan should cover all discharge of effluent at the plant site or adjacent to the plant site. Section 3-106A. of the regulations requires submittal of the discharge plan within 120 days of receipt of this notice unless an extension of this period is sought and approved.

The discharge plan should be prepared in accordance with Part 3 of the Regulations.

If there are any questions on this matter, please do not hesitate to call.

Very truly yours,

JOE D. RAMEY  
Director

JDR/fd  
enc.

cc: Oil Conservation Division - Artesia

HYDRO SCIENCE ENGINEERS, INC.

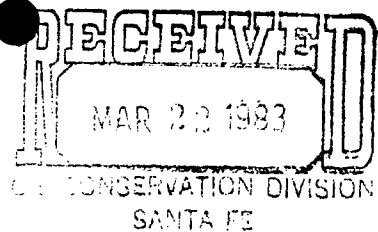
~~325 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road



March 19, 1983

Oil Conservation Division  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, NM 87501

Dear Mr. Simpson:

Enclosed is our report "Requirements for Application for Discharge Plan Approval for the Navajo Refining Company, Artesia, New Mexico." An invoice is also enclosed.

Please call me if we can be of additional service to you.

Very truly yours,  
HYDRO SCIENCE ENGINEERS, INC.

A handwritten signature in cursive script, appearing to read "George V. Sabol".

George V. Sabol  
President and Chief Engineer



HYDRO SCIENCE ENGINEERS, INC.

~~333 IDAHO~~  
~~LA MISSION PLAZA, SUITE 2~~  
LAS CRUCES, NM 88005  
(505) 526-3147  
2856 Glass Road



Oil Conservation Division  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, NM 87501

March 21, 1983  
Project No: 17:OCD-1  
Invoice No: 3

Attn: Mr. Oscar A. Simpson III  
Ref: Contract No. 71-9 and Contract No. 71-22

STATEMENT

Time period from December 1, 1982 to March 21, 1983.

Salary:

Navajo Refinery report #2 -  
110.25 hrs

\$4,514.37

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\$4,514.37

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Total Due \$4,514.37

Hydro Science Engineers, Inc.

By *George V. Sabol*  
George V. Sabol  
President and Chief Engineer

HYDRO SCIENCE ENGINEERS

Requirements for Application  
for Discharge Plan Approval  
for the  
NAVAJO REFINING COMPANY,  
Artesia, New Mexico

Prepared for the  
OIL CONSERVATION DIVISION  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Prepared by  
Hydro Science Engineers, Inc.  
2856 Glass Road  
Las Cruces, New Mexico 88005

March 1983

HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~  
~~LA MISSION PLAZA, SUITE 7~~  
LAS CRUCES, NM 88005  
(505) 526-3147  
2856 Glass Road

March 19, 1983

Oil Conservation Division  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, NM 87501

Dear Mr. Simpson:

We are pleased to transmit the report, Requirements for Application for Discharge Plan Approval for the NAVAJO REFINING COMPANY, Artesia, New Mexico.

It has been a pleasure working with you on this project. If you have any questions, or require additional information or clarification, please call me.

Very truly yours,  
HYDRO SCIENCE ENGINEERS, INC.



George V. Sabol  
President and Chief Engineer

## HYDRO SCIENCE ENGINEERS

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## HYDRO SCIENCE ENGINEERS

### Report Objective

The objective of this report is to provide technical assistance to the Oil Conservation Division of the New Mexico Energy and Minerals Department on information that should be submitted by the Navajo Refining Company with their application for discharge plan approval. Hydro Science Engineers is not necessarily privy to all operations of the Navajo Refining Company at Artesia, New Mexico, and therefore additional information beyond that specifically mentioned herein may be necessary for a satisfactory evaluation of a discharge plan request. The intent of this report has not been and is not intended as a review of the Navajo Refining Company waste water and waste disposal operations.

This report is based on review of an undated draft application for discharge plan approval by the Navajo Refining Company, and on information that was obtained during a plant visit of the facility by personnel of Hydro Science Engineers and Mr. Oscar A. Simpson III of the Oil Conservation Division on November 29, 1982. A report "Evaluation of the Draft Navajo Refining Company application for discharge plan approval" December, 1982 has previously been submitted to the Oil Conservation Division by Hydro Science Engineers, Inc.

This report is presented in outline form. This was done to present the information in a clear and concise manner. Data collection and analytic techniques have been suggested where appropriate, but other techniques may be acceptable.

## HYDRO SCIENCE ENGINEERS

### Discharge Plan Requirements

#### I. Introduction

##### A. Objective

1. Describe the refinery, its operation, and products.
2. Explain why the application is submitted.

##### B. Approach

Explain what was done in order to prepare a clear, well documented application.

##### C. Conclusions

1. Have the objectives been met satisfactorily?
2. Was the approach logical and thorough?
3. Do the results of the evaluation justify approval of the application?
4. Describe any remedial actions that are planned or in progress.
5. Describe any additional data if any, to be submitted in support of this application.

#### II. Background and history of the refinery

##### A. Index map

Show on an index map of appropriate scale the geographic setting of the refinery.

##### B. Land use map

Show on a map of appropriate scale all land use and ownership of property adjacent to and within reasonable proximity to the refinery and waste management facilities.

1. Industrial
2. Commercial
3. Residential
4. Irrigated land -- indicate source of water
5. Recreational land
6. Unused land

## HYDRO SCIENCE ENGINEERS

### C. History and operation of facility

1. When built
2. When operation began
3. Discuss the overall operation of the facility including operations that are performed by entities other than the Navajo Refining Company; such as, product transportation, pipelines, and hydrostatic test operations.
4. Material input to the refinery (type and quantity).
5. Product output from the refinery (type and quantity).
6. Processes used in the past.
7. Show on a map(s) or clear aerial photo(s) of appropriate scale, the location of all facilities, past and present.

### D. Waste treatment

1. Describe historic waste treatment processes, disposal methods, waste transmission facilities and waste storage facilities, including inactive or abandoned facilities.
2. Show on a map of appropriate scale the locations of all past and present treatment facilities and all water collection and transport facilities (could be incorporated with map from II.C.7.).

### E. Monitoring

1. Summarize the waste measurement and monitoring facilities.
2. Summarize all data including the period of record for each measurement and monitoring facility.
3. Provide all measurement and monitoring data in appropriate sections of the application.
4. Show the locations of all measurement and monitoring facilities on a map of appropriate scale (could be incorporated with map from II.C.7.).



## HYDRO SCIENCE ENGINEERS

### III. Physical environment

#### A. Geology

##### 1. Stratigraphy

- a. Describe all stratigraphic units from land surface to the maximum depth of water utilization or potential pollution.
- b. Describe any significant facies changes within any of the stratigraphic units.

##### 2. Physical characteristics of rocks

(Shallow rocks, including alluvium, should be given special emphasis).

- a. Texture
- b. Sorting
- c. Composition

##### 3. Structural features

- a. Direction and angle of dip
- b. Faults (location, orientation)
- c. Fractures (orientation, significance)

##### 4. Illustrations

- a. Provide a small-scale map of an adequate area containing the facility and waste disposal sites to show outcrops of pertinent stratigraphic units.
- b. Provide a geologic section through the facility and waste disposal sites.
- c. Provide an isopach map of the alluvium within one mile of the facilities.

#### B. Geomorphology

1. Describe the present land-surface configuration and drainage.
2. Describe the development of the physiographic features of the area.

## HYDRO SCIENCE ENGINEERS

### C. Soils

1. Describe the physical properties of the soils in the proximity of the facilities. USDA Soil Conservation Service soil survey information would be adequate in most cases.
2. Evaluate and report on water infiltration rates at the refinery and waste management sites.
3. Show the distribution of soil types in the area on a map of appropriate scale.

### D. Climate

1. List the mean, maximum, and minimum monthly and annual precipitation.
2. Characterize the amount, duration, and frequency of precipitation.
3. List the mean monthly and annual lake and pond evaporation.

### E. Surface water hydrology

1. Provide a history of flooding of the Pecos River near Artesia.
2. Provide current Pecos River flood frequency information.
3. Provide stage-discharge information for the Pecos River near the ponds.
4. Define the Pecos River discharge (and frequency) that would overtop the ponds.
5. Provide a Pecos River flood inundation map in the vicinity of the ponds for the 100-yr event.
6. Describe the stability of the banks of the Pecos River against lateral migration during flooding.
7. Provide a history of flooding of Eagle Draw and any other watercourses that could flood facilities.
8. List the drainage area of Eagle Draw and other local watercourses.

## HYDRO SCIENCE ENGINEERS

9. Present the Eagle Draw and any other local water-course flood hydrographs for the 100-yr rainfall.
10. Provide an Eagle Draw flood inundation map in the vicinity of the refinery, ditch, and ponds for the 100-yr event.
11. Describe the stability of the banks of Eagle Draw and other local watercourses against lateral migration during flooding.
12. Provide a 100-yr rainfall-runoff analysis for the facility. Is the entire physical plant constructed so as to prevent storm runoff generated outside from entering the plant boundaries? What is the destination of storm runoff from within the facility boundaries? Are there ponding zones within the facility boundaries where rainfall will pond and potentially percolate to the groundwater?
13. Describe surface water use, if any, within one mile of the refinery and waste management sites.
14. Describe the ultimate fate of water that may be impounded within the facility, such as in the diked storage-tank areas.

### F. Groundwater hydrology

1. Describe the water-bearing properties of all pertinent stratigraphic units, with special emphasis on the shallow aquifer, identifying both aquifers and confining beds.
  - a. Permeability and transmissivity
  - b. Porosity
  - c. Hydraulic gradient for each stratigraphic unit
  - d. Head differences between aquifers

## HYDRO SCIENCE ENGINEERS

2. Prepare a separate land surface contour map (such as USGS) at appropriate scale to show the locations of:
  - a. All waste disposal sites.
  - b. Any natural or man-made bodies of water and watercourses within one mile of facilities.
  - c. All wells within one mile of facilities.  
Each of these wells should be tabulated in the report to show location, date drilled, depth of well, depth of screened zones, use of well, and whether or not it was sampled for chemical analysis. The tapped aquifer and altitude of water level should be shown on the map beside the well symbol.
  - d. Identification of any other wells outside the one mile limit that are discussed in the discharge plan application.
  - e. Show the altitude of the water surfaces in the effluent ditch, the evaporation ponds, all ponded water in Eagle Draw, and in the Pecos River at low flow.
3. Prepare a water-level contour map at the same scale as III.F.2. for the shallow aquifer to extend one mile beyond the facilities and waste disposal sites.
4. Prepare a map of the same area and at the same scale as III.F.2. showing the depth to water in the shallow aquifer.
5. Prepare hydrographs to show changes in water levels with time in several representative wells.

## HYDRO SCIENCE ENGINEERS

### G. Water quality

(Note: All chemical analyses should include the concentrations of principal cations, as well as anions, to aid in the interpretation of water mixing and ion exchange reactions.)

#### 1. Surface water

- a. List chemical analyses and concurrent discharge rates for the Pecos River upstream and downstream from the facility and waste disposal sites for a wide range of flow rates and times. Water quality samples immediately upstream and downstream from the facility and also at the Hwy 82 bridge should be obtained after sustained low flow to allow pond seepage gradients to stabilize.
- b. Water quality samples should be obtained of runoff from Eagle Draw or other local watercourses when possible, both upstream of the refinery and at the confluence with the Pecos River.
- c. List analyses and describe the quality of any surface water used in the area.

#### 2. Groundwater

- a. Collect and analyze samples from a sufficient number of wells to assure thorough coverage of groundwater quality for all aquifers.
- b. Prepare a table showing for every well sampled:
  - 1.) Location of well
  - 2.) Depth of well
  - 3.) Aquifer
  - 4.) Chemical analyses
  - 5.) Method of construction
  - 6.) Casing material

## HYDRO SCIENCE ENGINEERS

- c. If the TDS and/or COD concentration is not uniform with time or location in any aquifer, the cause should be discussed.
- d. Historic quality of shallow groundwater should be provided, if available.
- e. Prepare isogram maps at the same scale as the water-level contour map to show concentrations of total dissolved solids and selected organic and inorganic constituents in the groundwater samples from the shallow aquifer.

### IV. Facility operation and waste management

#### A. Refinery

- 1. Describe the oil recovery program and results.
- 2. Explain geologic conditions that might allow the percolation of oil or wastes to the deep aquifer.
- 3. Describe the physical and chemical properties of all solid wastes and the location and method of their disposal.
- 4. Describe what happens to oil or products that may be leaked or spilled in the diked storage-tank area, facility area, and product loading areas.

#### B. Waste management

- 1. Describe in detail all waste disposal sites; including construction, wastes being treated, capacity, efficiency, and history of operation. These should be located on map II.C.7.
- 2. Characterize all input water and wastewater at the point of origin in the key water management facilities.
- 3. A schematic of all wastewater discharges must be provided. These should correspond to facilities shown on map II.C.7. This should also show facility runoff from rainfall.

## HYDRO SCIENCE ENGINEERS

4. All open, unlined ditches should be replaced with suitable conveyances that will eliminate uncontrolled inflows, spills from ditch breaks, and seepage into the ground.
  5. Ponds constructed with earthen embankments and without adequate freeboard and bank protection are inadequate to assure containment. Engineering plans for acceptable ponds should be submitted.
- C. Land Farm; TL (tetraethyl lead) pond; and firewater pond.
1. Characterize all wastes at their point of origin, treatment, transport, and storage. Quantity and quality must be documented.
  2. Describe each of these facilities regarding their construction and mode of operation.
  3. Describe the monitoring of each of these facilities and provide monitoring data.
  4. Evaluate the potential for seepage of effluent or leachate from these areas to enter groundwater.
  5. Discuss the storage and/or disposal of waste containers.
  6. All facilities designated as hazardous waste sites should provide adequate containment for the 1000-yr design storm (Resource Conservation and Recovery Act). Methods for estimating 1000-yr hydrologic events are not reliable; however, all hazardous waste facilities should be secure against events that are somewhat larger than the 100-yr event.

## HYDRO SCIENCE ENGINEERS

### V. Data collection and analysis

#### A. Sampling, laboratory, and analytical techniques

1. Sampling and analytical techniques should conform with those specified in the references provided in WQCC 82-1, Part 3-107.
2. Sampling of wastewater effluent should be conducted in a manner such that a discharge weighted sample is obtained.
3. Water in impoundments is probably stratified. Point samples should be obtained at various depths and a volume weighted concentration estimated.
4. Wastewater, groundwater, and surface water samples should be analyzed for all constituents listed in WQCC 82-1, Part 3-103, except those that clearly are not applicable. In addition to these constituents, the samples should be analyzed for calcium, magnesium, potassium, and sodium. The following significant pollutant parameters for the petroleum refining industry have also been identified (EPA 440/1-74-014a) and should be analyzed: BOD, COD, TOC, oil and grease, ammonia as N, phenolic compounds, sulfides, and vanadium.
5. Field measurements are essential for temperature, dissolved oxygen (DO), electrical conductivity (EC), pH, and voltage (eH). The field equipment and procedures should be described.
6. The sampling procedure for monitor wells should be documented. The monitor wells should be flushed before sampling, to assure that the samples represent water in the aquifer. Filtering of the sample in the field may also be necessary.



## HYDRO SCIENCE ENGINEERS

7. The wastewater should be screened for the presence of organic compounds by gas chromatography and mass spectrometry. The organic compounds should coincide with the characteristics of the products and wastes.
8. The constituents and parameters listed in V.A.4. should be evaluated quarterly for the first year and annually thereafter.
9. Specific conductance, pH, total organic carbon, total organic halogen, and water level can be used as indicators of chemical and physical change; that is, a significant change in any one of these variables in the groundwater indicates a failure to contain potential contaminants. Increases in specific conductance and changes in pH indicate changes in the content of inorganic substances. Changes in total organic carbon and total organic halogen indicate changes in organic compounds. Changes in water level may indicate a change in the hydraulic gradient and the potential for pollution. These parameters should be evaluated quarterly for the first year and semi-annually for the life of the facility. Four replicates are required at each sampling.
10. Statistical analyses must be performed in analyzing all the data. For example, the t-test should be performed on the parameters discussed in V.A.9. The test is applied to each annual average which is compared to the baseline data collected in the first year. The comparison is applied individually to data from each monitoring location. A single-tailed, t-test at the 0.1 level of significance should be used for specific conductance, total organic carbon, and total organic halogen. A two tailed, t-test at the 0.1 level of significance should be used for pH.

## HYDRO SCIENCE ENGINEERS

### B. Hydrologic monitoring

1. Flumes or other appropriately designed and constructed discharge measuring stations should be installed. These should be capable of maintaining a continuous record of discharge. Reliable discharge records must be provided.
2. Records of daily pond storage volume should be obtained. A stage gage or staff gage should be installed and stage-surface area and stage-volume rating tables should be prepared.
3. A raingage should be installed at the ponds and daily precipitation recorded.
4. Monthly mass balances must be performed. (Inflow + Precipitation - Evaporation - Seepage = Change in storage volume).
5. Monitor wells around the pond should be maintained in good condition to assure they do not provide erroneous or contaminated samples. Additional monitor wells may be needed to determine the extent and quality of pond seepage.
6. If the head in the deep aquifers is lower than in the shallow aquifer, deep monitor well(s) should be installed and monitored to determine if pond seepage has been percolating to the deep aquifers.
7. Provide information on all existing and planned monitor wells:
  - a. History of installation
  - b. Depth
  - c. Perforated and gravel packed zone
  - d. Aquifer
  - e. Isolation from contamination
  - f. Construction (casing material, backfilling, etc.)
8. Tabulate all monitor well data.

## HYDRO SCIENCE ENGINEERS

9. Hydraulic gradients from the ponds to the Pecos River should be presented. Data for such hydraulic gradient analyses should be obtained after sustained (several months) low flow in the Pecos River.
10. The bank of the Pecos River should be visually inspected each year after sustained low flow for evidence of pond seepage entering the river.

### VI. Plans, Schedules, and Reports

#### A. Plans and Schedules

Plans and time schedules for improvements to facilities, operating procedures, and waste management should be submitted.

#### B. Discharge measurements and monitoring

The design and time schedule of the discharge measurement and monitoring program should be submitted.

#### C. Reporting plan

A reporting plan for monitoring data and analysis should be submitted.

#### D. Failure detection and contingency plans

A detection and contingency plan in case of failure in the waste management system should be submitted.

#### E. EPA letters of notification

All EPA Letters of Notification for disposal operations should be included in the Discharge Plan.

#### F. Safety data sheets

Safety Data Sheets, as required by OSHA of chemical manufacturers, should be provided for each chemical in use. Safety information, environmental precautions, and toxicological information is contained on these.

#### G. Spill Prevention and Counter-Measure Control Plan

The Spill Prevention and Counter-Measure Control Plan as required by the Clean Water Act should be made part of the Discharge Plan.

## HYDRO SCIENCE ENGINEERS

### H. EPA Applications and Permits

EPA Applications and Permits to operate hazardous waste disposal sites should be made part of the Discharge Plan.

### I. Discharge plan and reporting schedule

The Navajo Refining Company should submit a compliance schedule to meet the needs of the Discharge Plan. A reporting schedule should also be included to indicate progress.

TELEPHONE  
(505) 748-3311



## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
(910) 986-0990

February 21, 1983

Mr. Oscar Simpson  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

Dear Mr. Simpson:

I appreciate you taking the time to talk with me on Monday, February 14. As I hope I made it clear in our conversation, Navajo Refining has been persuing the development of a new discharge plan, which would combine our effluent with the City of Artesia's treatment plant effluent, for reuse in watering the city parks. My purpose in contacting you was to make you aware of the idea and to begin to explore with the OCD any special information or testing that may be needed in relation to this concept.

My idea is to split Navajo's effluent into two systems based on the source and quality of the individual effluent streams. This split would follow the lines of Process effluent and Blowdown effluent. Process effluents are in general, those water streams that have been in direct contact with hydrocarbons in the refining process. Process effluent water, for the most part, started as steam and is therefore high quality water for reuse in the refinery as long as the residual hydrocarbons are removed.

Blowdown effluents are those streams generated to keep cooling water and boiler water in material balance for dissolved solids. Water softener regeneration effluent would also be added to the cooling tower and boiler blowdown streams. This combined blowdown effluent is the water that Navajo is studying to mix with the City's effluent reuse system.

2/21/83

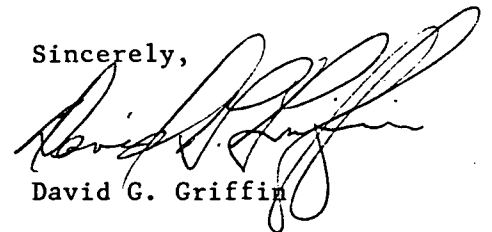
Early this past summer, Navajo funded through the Environmental Engineering Department at New Mexico Institute of Mining and Technology, research to study the characteristics of our individual effluent streams. As the idea of combining with the City's reuse system developed, potential problem areas were targeted for closer scrutiny. Agriculture experts from New Mexico State University have been contacted to cover questions arising as to the suitability of the combined City and Navajo effluents for irrigating bermuda grass in the City parks.

The result of these past months of research work is that the project appears to be feasible from a scientific and technical stand point. I feel it is now time to approach you so that any regulatory problems can be identified, explored and hopefully resolved. I have enclosed a summary of the latest analytical data I have for your initial review and comment. More up to date data, particularly on the City's effluent, will be available soon with the completion of modifications to the City's treatment plant.

Following your initial review of the enclosed data, I will be happy to try to answer any questions you may have. If necessary, I can arrange to bring the individuals involved in various phases of this work to Santa Fe for a meeting.

I am looking forward to your comments on this project.

Sincerely,



David G. Griffin

DGGr:pd

attachment

THEORETICAL NAVAJO/ARTESIA COMBINED EFFLUENT

	<u>400,000</u>	<u>750,000</u>	<u>1,150,000 GPD</u>
	<u>GPD (35%)</u>	<u>GPD (65%)</u>	
<u>Mg/l</u>	<u>NAVAJO</u>	<u>CITY</u>	<u>Combined</u>
As	0.004	<0.01	<0.01
Ba	<0.01	0.10	0.1
Cd	<0.01	0.001	<0.01
Cr *	0.3 *	<0.01	0.1
CN	N/A	<0.01	assume <0.01
F	2.48	0.99	1.5
Pb	0.07	0.02	0.04
Hg	N/A	0.002	assume 0.002
NO <sub>3</sub> asN	0.38	0.27	0.3
NH <sub>3</sub> asN	N/A	21	assume 21
P	N/A	9	assume 9
Se	N/A	0.02	assume 0.02
Ag	<0.05	<0.001	<0.05
U	<0.05	N/A	assume <0.05
Cl	1200	297	600
Cu	<0.03	0.07	<0.07
Fe	0.43	0.42	0.43
Mn	0.04	0.04	0.04
SO <sub>4</sub>	1180	460	700
TDS	2700	1606	2000
Zn	0.20	0.20	0.20
pH	8.3	8.0	8.1
Al	<1.0	N/A	assume <1.0
B	N/A	0.40	assume 0.40
Co	0.01	N/A	assume 0.01
Mo	<0.5	0.01	<0.5
Ni	<0.05	0.01	<0.05
COD	33	58	50

N/A - Not Available

\* Navajo is investigating the possibility of using a nonchromate cooling water treatment program to eliminate chromium from discharge.



Information: 505/835-5420  
Publications: 505/835-5410

New Mexico Bureau of Mines & Mineral Resources  
Socorro, NM 87801

A DIVISION OF  
NEW MEXICO INSTITUTE OF MINING & TECHNOLOGY

December 17, 1982

RECEIVED

DEC 21 1982

NAVAJO REFINING CO.

Dave Griffin  
Navajo Refining Company  
Drawer 159  
Artesia, NM 88210

Dear Dave,

Enclosed you will find a listing of the analyses we have completed on the waste water samples you brought us on November 11, 1982. Listed on the far left of the table are the groundwater standards which the consultant felt would have to be met if the water was going to be used for watering. We have done all the analyses we can do except for mercury and selenium which we will try to complete right after the 1st of the year. I don't think there will be any mercury or selenium anyway. The other analyses (CN, B, and phenols) we aren't set up to run. As far as trace elements are concerned you are in good shape except for chromium, fluoride and possibly iron. The big problem appears to be sulfate and TDS. This problem is really only a sulfate problem because if you could remove the sulfate--the TDS would be acceptable. Also several of the samples have high pH values but this could be easily remedied.

I don't know any good way to easily remove sulfate; adding BaCl comes to mind but this might cause problems with too high barium values. Depending on what your flow rates and volumes are and what the flow rates and volumes are for the city discharge, it may be possible to use dilution to lower sulfate to acceptable levels. Oh, I should mention that we didn't have enough volume of sample to determine sulfate on these samples. The sulfate values are from the previous set of samples.

I hope this has been helpful to you. Merry Christmas and Happy New Year. Thanks for the lovely card.

Sincerely,

(Mrs.) Lynn Brandvold  
Senior Chemist

LB/ld

Enc:

cc: Don Brandvold  
Geof Purcell



Navajo Refining Co. Wastewater Analyses

Groundwater Standards		South Division Boiler Blowdown	South Division TCC Unit Cooling Tower Blowdown	North Division Cooling Tower Blowdown	South Division Alky Cooling Tower Blowdown	North Division High Pressure Boiler Blowdown	North Division Low Pressure Boiler Blowdown	North Division FCC Unit Cooling Tower Blowdown
	Mg/l							
As	0.1	.004	.011	.004	<.001	.005	.003	.001
Ba	1.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Cd	.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Cr	.05	<.05	<.05	.06	1.05	<.05	<.05	0.22
CN	.2							
F	1.6	3.1	2.2	1.6	4.4	2.2	1.5	1.6
Pb	.05	.18	<.05	.05	.05	.14	.05	.05
Hg	.002							
NO <sub>3</sub> <sup>as(N)</sup>	10.0	.2	.2	.5	.75	.1	.05	.3
Se	.05							
Ag	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
U	5.0	<.05	<.05	<.05	<.05	<.05	<.05	<.05
Cl	250	127	44	48	53	73	44	47
Cu	1.0	<.03	<.03	<.03	<.03	<.03	<.03	<.03
Fe	1.0	1.9	<.05	.05	.5	0.65	0.25	<.05
Mn	.2	.07	<.03	<.03	.07	<.03	<.03	<.03
SO <sub>4</sub>	600	1549	1236	1077	1461	1242	693	1067
TDS	1000	4220	1694	1906	2732	2873	1807	1937
Zn	10.0	.06	<.01	.48	28	<.01	<.01	.17
pH	6-9	11.6	7.7	7.6	6.9	11.6	11.2	8.0
Al	5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B	.75							
Co	.05	<.01	.02	<.01	.01	.02	.01	.01
Mo	1.0	<.5	<.5	<.5	<.5	<.5	<.5	<.5
Ni	.2	<.05	<.05	<.05	<.07	<.05	<.05	<.05
Phenols	.005							
TSS		20	67	13	0	0	0	0
Conductivity		6000	1600	1850	2400	5000	2800	1800
COD		116	108	0	0	0	0	15

HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road

OIL CONSERVATION DIVISION

DEC 13 1982

RECEIVED

December 9, 1982

Mr. Oscar A. Simpson, III  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Simpson:

Hydro Science Engineers has evaluated the draft Navajo Refining Company Application for Discharge Plan approval, and the evaluation report is hereby submitted. We will begin preparing a report on the additional information, data collection, and analysis that should be submitted with a final Discharge Plan from the Navajo Refining Company.

If you need any additional information or assistance with this evaluation, please contact me.

Sincerely yours,



George V. Sabol  
President and Chief Engineer

GVS/js

Enclosures

Report Separate in file  
ATB

HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road

November 19, 1982

Mr. Oscar Simpson, III  
Oil Conservation Division  
P.O. 2088  
Santa Fe, NM 87501

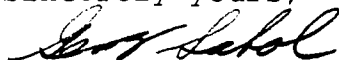
Dear Mr. Simpson:

Enclosed is our invoice for review of the discharge plans for the Plateau and Navajo refineries. You will notice that \$3,258.98 of the total contract limit of \$5,000. has been expended at this time. Next month's travel to Artesia to visit the Navajo plant and preparation of the final review report will expend the remainder of the contract funds. We would like to continue to provide service to you and the Oil Conservation Division. Do you anticipate issuing a follow-on contract to us? We are willing to continue to provide service to the Oil Conservation Division under the same terms as our present contract. The Navajo and Plateau refineries have each presented the need for very thorough reviews, and these were also our first reviews of this nature. We would anticipate that additional reviews would be more cost efficient. However, we recommend an increased funding limit for a follow-on contract to avoid inconvenience and administrative cost of numerous smaller contracts.

We also would like to be able to address some or all of the numerous general work elements that you have discussed with me regarding the preparation of a more documented request for discharge plans, underground injection control, hazardous waste disposal, hydrostatic pipeline cleaning and testing, and related problems. It may be more desirable for both the Oil Conservation Division and Hydro Science Engineers to address these under a separate work plan and contract. I would like to discuss this with you. Maybe we will have time for this during our Navajo plant visit.

It is a pleasure working with you and the Division and hopefully our service has been of valuable assistance to you.

Sincerely yours,



George V. Sabol  
President and Chief Engineer

HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road

Oil Conservation Division  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, NM 87501

November 19, 1982  
Project No: 17:OCD-1  
Invoice No: 1

Attn: Mr. Oscar A. Simpson III  
Ref: Contract No. 71-9

STATEMENT

Time period from October 20, 1982 to November 15, 1982.

Salary:

Plateau review - 18.5 hrs.      \$ 636.88  
Navajo review - 57.5 hrs.      \$2,538.50

---

\$3,175.38

Direct Cost:

Travel to Santa Fe, October 20, 1982  
( $\frac{1}{2}$  cost of travel charged to this project)  
Mileage:  $\frac{1}{2}$ (\$.22/mile)(560 miles) =  
\$ 61.60  
per diem:  $\frac{1}{2}$ (\$44.00/day)(1 day) =  
\$ 22.00

---

Total Direct Cost      \$ 83.60

---

Total Due      \$3,258.98

Hydro Science Engineers, Inc.

By *George V. Sabol*  
George V. Sabol  
President and Chief Engineer

HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road

November 16, 1982

Mr. Oscar A. Simpson, III  
Oil Conservation Division  
P.O. 2088  
Santa Fe, NM 87501

Dear Mr. Simpson:

Enclosed is our preliminary review of the Navajo Refining Company discharge permit application.

Our review is in two parts: First, we have provided specific comments on the submitted application. Second, we have compiled a list of additional information and analyses that should be submitted before the application can be adequately evaluated.

This preliminary review is intended for your use prior to the Navajo plant visit on November 29, 1982. We will modify our review as necessary at the conclusion of the plant visit and submit a final review at that time. We anticipate the need to expand upon the list of additional information and analyses that should be requested.

We hope our review will be of service to you and the Oil Conservation Division.

Sincerely yours,



George V. Sabol  
President and Chief Engineer

GVS:jrs

*SUBMITTAL OF DRAFT  
In Separate File with  
Final report*

TELEPHONE  
(505) 748-3311



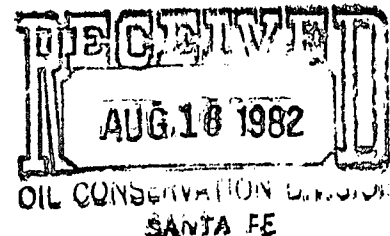
## REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
(910) 986-0990

August 13, 1982



Mr. Joe Ramey  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This letter will confirm our telephoned report of oil seepage into Eagle Draw, which runs through the northern part of our refinery at Artesia, New Mexico.

We have erected a sandbag and earthen dike to contain this oil, and with the help of our consulting hydrologist, Mr. Ed Kinney, we are drilling test holes to determine the source of the seepage. With information obtained from these test holes, we will locate an oil recovery system to prevent any further seepage to Eagle Draw.

We will keep your office informed on our progress, and as soon as we determine the source and area of the underground oil, we will make a detailed report. If you have any questions concerning this report and our plans, please let me know.

Yours truly,

*Dewie O. Stevenson*  
Dewie O. Stevenson  
General Manager, Refining  
and Technical Services

DOS/jh

HYDRO SCIENCE ENGINEERS, INC.

225 IDAHO  
LA MISSION PLAZA, SUITE 7  
LAS CRUCES, NM 88005  
(505) 526-3147

July 5, 1982

Mr. Oscar A. Simpson III  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM. 87501

Dear Mr. Simpson:

We have been reviewing the various Oil Conservation Division work elements and I will be calling you the week of July 12th to discuss these with you.

I'm glad that Dr. Fernando Cadena had the opportunity to visit you in Santa Fe.

I have enclosed two copies of the company brochure for your review and use.

Sincerely yours,



George V. Sabol  
President & Chief Engineer

GS/bt

enc: brochures

TELEPHONE  
A. C. (505) 746-9851



# REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

ARTESIA, NEW MEXICO 88210

TELETYPE  
910-986-0990

19 January 1982

Mr. Joe Ramey, Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

For many years Navajo has had evaporation ponds east of its Artesia refinery. Since the time that the OCD became responsible for the water quality regulations of the oil industry, Navajo has been consulting with the Department to insure that these ponds did not degrade potable water supplies or endanger human health, animal or plant life or property.

At the suggestion of the Department, Navajo drilled 14 test wells adjacent to the ponds and has monitored those wells regularly.

In May of last year you, Mr. Stamets, Mr. Reid, Mr. Chamberlain, and Mr. Carson met in the offices of Losee, Carson & Dickerson, P.A. to review Navajo's progress and determine what further information, if any, was needed by the Department. Mr. Carson's notes suggest that the Department wanted the following additional tests done and improvements be made:

1. drill two more wells at ponds to a depth of 35 feet;
2. employ a professional engineer to sample water and make tests to determine if water is leaking into the underground aquifer;



Mr. Joe Ramey  
19 January 1982

-2-

3. submit proof that one hundred year flood will not cause damage at the ponds;
4. drill wells to test for ditch leakage; and
5. consider leaving ditch where it breaks.

Navajo has drilled two more wells as requested to test the ponds. It has employed Ed Kinney to make independent tests and monitor the wells.

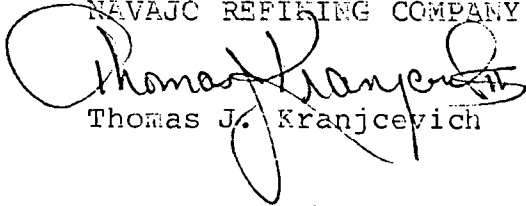
Mr. Kinney has previously submitted information to the Department that shows that the amount of water that the Navajo ponds contributes to a one hundred year flood is so infinitesimally small as to be no factor at all.

Mr. Kinney tested the irrigation and domestic wells near the ditch, but Navajo has budgeted money to pipe water from the plant to the ponds. Therefore, items four and five are no longer material.

The Kinney study, as well as the data provided by Navajo, should be sufficient to allow the Department to either determine that Navajo does not need a discharge permit or that if it does need a permit, its present plan for discharge is satisfactory.

Yours truly,

NAVAJO REFINING COMPANY



Thomas J. Kranjcevic

TJK:bjm

D R A F T

Application for Wastewater

Discharge Permit

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

*Report Separate in file  
JYB*

D R A F T

*Date ?*

*Sometime late 1981 or early 1982  
JYB*



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

November 16, 1981

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico

Re: Request for Discharge  
Plan for Navajo Refinery

Gentlemen:

Pursuant to recent telephone conversations with Mr. Kranjceovich, it has become apparent that the representatives of Navajo Refining Company do not believe that a discharge plan is required for Navajo Artesia Refinery.

The Oil Conservation Division (OCD) requested a discharge plan from Navajo as per the letter of April 29, 1980. (copy enclosed) This letter of notification to you is still in effect and you must submit a discharge plan. Your contention that a discharge plan is not required is not valid. You have not submitted evidence to the OCD's satisfaction that Navajo doesn't need a discharge plan.

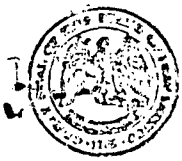
Mr. Carson's letter of October 20, 1981 requesting a extension will be granted with the due date of the Discharge plan being January 15, 1982. This is the last extension to be granted. If a Discharge Plan isn't submitted to the OCD on that date we will take appropriate measures to prevent any discharge from Navajo's Artesia Plant.

If you have any questions, please contact me or Oscar Simpson at (505) 827-2534.

Yours very truly,

JOE D. RAMEY  
Division Director

JDR/jc



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

April 29, 1980

Navajo Refining Company  
Drawer 159  
Artesia, New Mexico 88210

Re: Request for Discharge Plan

Gentlemen:

Under provisions of the regulations of the Water Quality Control Commission I am hereby requesting the filing of a discharge plan for Navajo's Artesia Refinery.

This plan should cover all discharges of effluent at the refinery site and to the waste water lagoons located adjacent to the Pecos River. Section 3-106 A. of the regulations requires submittal of the discharge plan within 120 days of receipt of this notice unless an extension of this time period is sought and approved.

The discharge plan should be prepared in accordance with Part 3 of the Regulations, a copy of which is forwarded herewith. Due to a recent court decision references to "toxic pollutants" may be ignored.

If there are any questions on this matter, please do not hesitate to call me or Thomas Parkhill at 827-3260. Mr. Parkhill has been assigned responsibility for review of all discharge plans.

Yours very truly,

JOE D. RAMEY  
Director

*Joe Ramey 29, 1980*

cc: OCD Artesia District Office

enc.

RECEIVED  
OCT 23 1981  
A.J. LOSEE  
JOEL M. CARSON  
CHAD DICKERSON  
DAVID R. VANDIVER  
OIL CONSERVATION DIVISION  
SANTA FE

LAW OFFICES  
LOSEE, CARSON & DICKERSON, P. A.  
300 AMERICAN HOME BUILDING  
P. O. DRAWER 239  
ARTESIA, NEW MEXICO 88210

AREA CODE 505  
746-3508

20 October 1981

Mr. Joe D. Ramey, Director  
New Mexico Oil Conservation Division  
Energy and Minerals Department  
P. O. Box 2088  
Santa Fe, New Mexico 87501

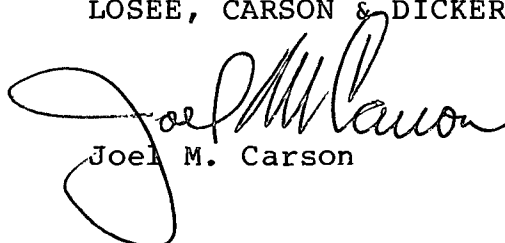
Re: Navajo Ponds

Dear Mr. Ramey:

In August of this year I called you and Dick Stamets to tell you that our agreed upon consultant on the Navajo ponds and ditch matter had become ill and would be undergoing testing for awhile. The tests which Ed Kinney took revealed that he had a malignancy in the area of his prostate. He has since that time been undergoing periodic laser beam treatments at the Lovelace Clinic in Albuquerque. I have talked to people who are in contact with Ed on a regular basis and am informed that he will be able to pick up our consulting work again in the middle of November. I would like to request an extension of time for the submission of the information upon which we agreed at the meeting here in Artesia until December 15 in hopes that Mr. Kinney can complete the study. He has been involved in this project for a number of years, and we would like to see that it is completed by him, rather than to have to get new consultants who would perhaps not accept the work that Mr. Kinney has done or rely upon it for their professional advice. We appreciate your consideration of this letter.

Yours truly,

LOSEE, CARSON & DICKERSON, P.A.

  
Joel M. Carson

JMC:bjm

cc: Mr. W. C. Chamberlain

EDWARD E. KINNEY

P. O. Box 526

ARTESIA, NEW MEXICO 88210

May 29, 1981

Oil & Gas Division  
Box 2088  
Santa Fe, N M 87501

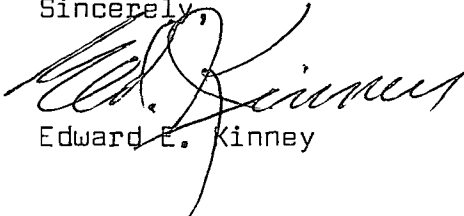
Attention: Mr. Oscar Simpson

Gentlemen:

Herewith is a photocopy of a portion of an EPA financed study on water well monitoring.

The question of well flushing was not settled in their study and leaves the matter somewhat in the air. In the case of the Navajo observation wells in Eddy County, I believe the circulation of ground water within the aquifer and through the casing perforations permits of representative sampling of said water.

Sincerely,

A handwritten signature in dark ink, appearing to read 'E. E. Kinney', written over a horizontal line.

Edward E. Kinney

EDWARD E. KINNEY

P. O. Box 526

ARTESIA, NEW MEXICO 88210

May 29, 1981

Oil & Gas Division  
Box 2088  
Santa Fe, N M 87501

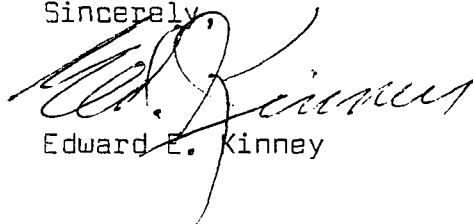
Attention: Mr. Oscar Simpson

Gentlemen:

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The question of well flushing was not settled in their study and leaves the matter somewhat in the air. In the case of the Navajo observation wells in Eddy County, I believe the circulation of ground water within the aquifer and through the casing perforations permits of representative sampling of said water.

Sincerely,

A handwritten signature in dark ink, appearing to read "E. E. Kinney", is written over the typed name. The signature is fluid and cursive.

Edward E. Kinney

# Samples Collected Sequentially by Four Pumping Immediately After Flushing 10 Well-Volumes (Concentration in

Mechanism	pH	Ca	Fe	K	Mg	Na	Zn
	6.7	111	11.6	ND*	44.6	186	0.18
	7.7	106	3.7	ND*	44.0	183	0.03
	7.5	105	0.7	ND*	43.6	182	0.03
	6.8	105	13.5	ND*	42.2	179	0.96

Mechanism	pH	Ca	Fe	K	Mg	Na	Zn
	6.8	32.5	5.74	189	94.2	215	ND*
	7.8	36.1	1.79	202	111	239	ND*
	7.8	37.1	.57	199	115	247	ND*
	6.8	42.3	7.42	193	114	235	ND*

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highest Fe and  
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te the rate and  
and to prevent

## Well Flushing

It is a common practice to flush a monitoring well to remove the stagnant water (storage water) in the well casing before sample collection. Although this is a common practice, there is again little supportive data to establish the extent of well flushing necessary before a representative sample can be taken from a particular monitoring well.

Figure 4 is a plot of the Fe, K, Mg, Mn and Zn concentrations in samples collected with a peristaltic pump from site 5 and is representative of the results obtained during this phase of the project. Figure 4 shows that there is no significant change in the K, Mg or Mn concentrations with volumes pumped. However, the Fe and Zn concentrations in the water decreased steadily until 8 to 10 well-volumes had been flushed from the well. Overall, for the six sites studied, the concentrations of Ca, Cl, K, Mg, Mn and Na showed little or no change as a response to well flushing. The extent of flushing did affect the concentrations of Fe and Zn at all of the sites.

The individual worker must recognize the existence of site-specific variables of geology, hydrology and water chemistry between waste disposal sites, and realize that the extent of well flushing required to

obtain a "representative" water sample will be different for each monitoring well. A specific volume of water pumped from one monitoring well before sample collection may be sufficient to produce a representative sample of the aquifer water, but at another site the same volume may be insufficient or result in overpumping. Overpumping may produce ground water from another source that could dilute or concentrate certain constituents. This is especially a problem at wells in disposal sites where heterogeneous wastes are buried in close proximity to the well. There may also be site-specific variations in the response of a particular constituent to well flushing.

## Seasonal Fluctuations in Quality of Ground Water

A problem that may arise during sampling involves seasonal fluctuations in the quality of ground water. Two of the sites were sampled twice using the peristaltic pump, once during the monthly sampling and a second time when all four pump systems were used sequentially. It is instructive to compare the samples that were collected for one of these sites using the same pump under identical operating conditions but at different times of the year.

Figure 5 depicts the change in Fe concentrations while pumping 10 well-volumes at site 6 during the August and February sampling intervals. The well at site 6 is screened directly beneath the refuse at a municipal landfill. The landfill has a thin soil cover, which allows for rapid recharge by infiltrating rain water. These factors increase the possibility of seasonal variations in ground-water chemistry at the site. Ground water within a landfill also has an extremely heterogeneous chemical nature, dependent upon its immediate environment within the landfill. Thus, samples from a well placed directly into or beneath the refuse could exhibit large fluctuations in chemical composition.

The decrease in Fe during pumping in August was felt to represent an aquifer under oxidizing conditions. The trend of increasing Fe in the February samples would indicate that the aquifer (or refuse) was under a more reduced environment with more Fe in solution. The pres-

ence of a frozen soil cover in winter, creating a closed system, not permitting the introduction of air (oxidants), could explain the reducing environment. It is noted that it would be very difficult to obtain reproducible "representative" samples of water from this monitoring well, as there are too many factors affecting the quality of the water.

## Sample Preparation and Storage

The effort to collect a representative ground-water sample from an aquifer via a monitoring well may be futile if the chemical composition of the sample changed between the time of collection and analysis. Proper sample preparation, filtration and storage can help minimize such changes from occurring. One phase of the project was particularly concerned with whether EPA-prescribed procedures for preparation and preservation of samples should be applied immediately after sample collection or later in the laboratory.

Table 2 gives the results of storage analysis conducted on samples taken from sites 5 and 6 respectively. Again, certain parameters are more sensitive than others to the length of time before filtration and preservation. The sample Fe increases 0.3 to 0.4 units, and the Ca and Zn concentrations are reduced to less than detectable concentrations in a 7-hour period between collection and preparation. The Ca, K, Mg, Mn and Na concentrations display a slight decreasing trend over a 48-hour period.

Results of the filtration experiments using the three pore size membranes are not included in this review. However, the analysis indicated that Fe, Mn and Zn are sensitive to the pore size of the membrane used for filtration. Ca, K, Mg and Na concentrations were similar regardless of the pore size. The 0.45  $\mu$ m pore-size membrane effectively removed colloidal-sized particles and resulted in a practical filtration method for on-site use.

## Conclusions

On the basis of the results of this study, collecting "representative" water samples from monitoring wells is not a straightforward





STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

May 28, 1981

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

Attention: Tom Kranjceovich

Re: Navajo's Discharge Plan

Dear Sir:

In response to the meeting held with your consultant Geologist Ed Kinney on May 21, 1981, in Artesia, I am requesting that another set of samples be collected and tested in the appropriate methods as prescribed in the Water Quality Control Commission Regulations - Part 3 Section 3-107 (B).

Discussion with Mr. Kinney on methods used to collect water samples revealed that incorrect methods were used to collect and preserve or stabilize the samples.

If you have any questions regarding this matter, please call me at 505-827-2534.

Sincerely,

*Oscar O. Simpson*  
OSCAR O. SIMPSON III  
Water Resource Specialist

OS/og



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

May 27, 1981

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico

Re: Navajo Discharge Plan

Gentlemen:

In response to your lawyer's letter of May 13, 1981, asking for an extension of time for Navajo's Discharge Plan, a 90 day extension is hereby granted.

The extension of time was granted on the basis that Navajo Refining Company needs additional time to supply information requested as per the meeting held on May 12, 1981 between the Oil Conservation Division and Navajo Refining Company. The extension of time for Navajo's Discharge Plan is hereby extended from May 15, 1981 to August 19, 1981.

If you have any questions regarding this matter, please call me or Oscar Simpson.

Sincerely,

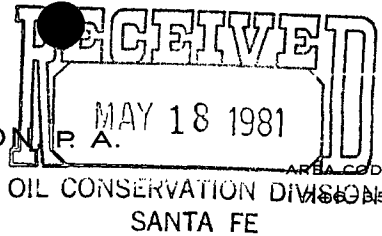
JOE D. RAMEY  
Division Director

JDR/OS/og

cc: Joel M. Carson

A. J. LOSEE  
JOEL M. CARSON  
CHAD DICKERSON  
DAVID R. VANDIVER

LAW OFFICES  
LOSEE, CARSON & DICKERSON, P. A.  
300 AMERICAN HOME BUILDING  
P. O. DRAWER 239  
ARTESIA, NEW MEXICO 88210



13 May 1981

Mr. Joe D. Ramey  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501


Attention: Mr. Oscar Simpson

Dear Mr. Ramey:

This letter will operate as a request for extension of time  
for filing our information relating to the discharge for the  
Navajo ponds.

Yours truly,

LOSEE, CARSON & DICKERSON, P.A.



Joel M. Carson

JMC:bjm



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

February 9, 1981

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Mr. Joel M. Carson  
Losee, Carson & Dickerson  
Attorneys at Law  
Drawer 239  
Artesia, New Mexico 88210

Dear Mr. Carson:

An extension to May 15, 1981, for submission of a discharge plan for the Navajo Artesia Refinery, is hereby granted.

Yours very truly,

JOE D. RAMEY  
Director

JDR/fd

A. J. LOSEE  
JOEL M. CARSON  
CHAD DICKERSON  
DAVID R. VANDIVER

LAW OFFICES  
LOSEE, CARSON & DICKERSON, P.A.  
300 AMERICAN HOME BUILDING  
P. O. DRAWER 239  
ARTESIA, NEW MEXICO 88210



AREA CODE 505  
746-3508

4 February 1981

Mr. Joe Ramey, Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Navajo Ponds

Dear Mr. Ramey:

Our meeting of January 29, 1981 makes apparent that Navajo needs to refine the data submitted to your department as proof that Navajo is not contaminating any fresh water aquifer. We, therefore, request an extension of time of ninety days within which to submit the report on the ponds.

Yours truly,

LOSEE, CARSON & DICKERSON, P.A.

A handwritten signature in cursive script that reads "Joel M. Carson".

Joel M. Carson

JMC:bjm

cc: Mr. Jack P. Reid  
Mr. Ed Kinney  
Mr. W. C. Chamberlain

May 15

D R A F T

Application for Wastewater

Discharge Permit

Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

D R A F T

*Date ?*

## I. Introduction

The Navajo Refining Company presently operates at a capacity of approximately 30,000 barrels of crude oil per day. The refinery is divided into two main sections - the North Plant and the South Plant. (See Appendix A.)

Products produced at the refinery are principally gasoline, jet fuel, diesel fuel, and asphalts.

Since the discharge plan is addressed to the waste water effluent of the refinery, all sections of the refinery waste collection and disposal systems will be addressed.

## II. Water Collection System

### North Division

The process area in the North Division rests on concrete pads, with a four inch curbing around part of the periphery. Normal drainage in this area is to an oil trap. The separated oil is collected in a slop tank for disposal and the water is discharged to the effluent ditch.

### South Division

The process area in the South Division is enclosed either by curbing or by a drainage ditch covered by metal grating. Most of the process units rest on concrete pads. The sewer system is designed to direct wastewaters possibly contaminated by oil to an API Separator. Surface drainage from most of the process area flows to the API Separator. Clean water such as cooling water and boiler blowdown bypasses the API Separator.

### Storage Areas

Diked storage areas in the refinery are not provided with any means of drainage. Due to the high evaporation rate of this area of the country, any accumulated rainwater will readily evaporate. Therefore, there is no danger of oil or oily wastes being drained from the dikes with stormwater.

### General Area Drainage

In the vicinity of the refinery, the general drainage pattern is to the north and east. A small creek named Eagle Draw runs generally eastward, paralleling the plant effluent ditch, and

eventually empties into the Pecos River. Annual average rainfall in this area is only eleven inches, and therefore, Eagle Draw is normally dry. During periods of rain, however, the creek carries considerable flow to the Pecos River.

#### Wastewater Treatment System

The refinery process waters average approximately 450 gpm. Oily wastewaters are treated either in the oil separator at the North Plant or the API Separator at the South Plant. The effluent is discharged to a drainage ditch. The ditch flows two miles east from the refinery to a series of evaporation ponds near the Pecos River. The first pond underflows to the second. The second pond flows in turn to the third. There is no direct discharge to the Pecos River or any other waterway.

#### Water Balance

Based on a total water usage of 1,032,000 gpd of fresh water, 45% is utilized for cooling towers, 24% for softeners, and 31% for other uses, including utilities. Evaporation losses in the cooling towers account for 30% of the fresh water and approximately 10% due to steam vented into the atmosphere. The remainder (619,000 gpd) becomes waste effluent.

#### Wastewater Balance

The total waste effluent is 619,000 gpd, of which 30% is from utilities and other uses, 44% is condensate, 21% is from cooling towers, and 5% is from softeners and boilers.

#### Water and Wastewater Characteristics

Composite samples of the significant waste streams were collected for characterization of the waste effluent (see Appendix B). In addition, grab samples of city water, well water surrounding the effluent ditch and evaporation ponds, and the Pecos River were collected and analyzed (see Appendix C).

#### Wastewater Flow

To verify the quantity of wastewater flow, a flow measurement system was installed at two different points - plant discharge and evaporation ponds. Daily measurements established the mean average flow in gallons per day. The total combined average flow was 550,000 gpd. The South Plant contributes about 300,000 gpd, and the North Plant about 180,000 gpd. The balance is clean water (boiler flowdown, softener backwash, and wastewater).

For the combined streams, the peak flow is about 10% greater than the average flow. For the South Plant effluent, the peak flow is 15% greater than the average flow.



Navajo Refining Company produces the same kind of product mix all year long, so there is no seasonal variation in wastewater quantity or quality.

### Geology

Southeastern New Mexico during Paleozoic time (600 to 240 million years before the present) was a sea area. In this sea, nearly the whole range of Paleozoic beds were deposited. The beds lapped onto the old Pre-cambrian high (Pedernal Land Mass) which lay northwest of present Artesia. During the Permian time (at the end of the Paleozoic) the seas lapped over the land mass and deposited Permian beds thereon.

Towards the end of Mississippian time, tectonics started with major faulting and the commencement of downwarping of the Permian Basin of New Mexico and West Texas. The northwest hinge-line was in the vicinity of Artesia, New Mexico. Faulting continued until nearly recent times on a sporadic basis as the basin developed and the whole area rose above sea level. The major trend of the faulting is NW-SE with a complimentary trend striking NE-SW.

Here at Artesia, the near surface beds (to 1,000 feet of depth) are the formations of the Artesia Group and the San Andres Formation all of Permian Age. East of the Pecos River, the full section of the Artesia Group is present. From the river westward, only the lower part of the Group is present - the Seven Rivers Formation, the Queen Formation and the Grayburg Formation. Underlying the Artesia Group is the San Andres Formation. The formations dip generally southeast at 85 feet per mile into the Permian Basin. The land surface from the Pecos River westward rises at 34 feet per mile; hence, the land surface truncates the underlying formations. With this report is a "geological Structure Composite" cross-section through sections 9 to 12, T17S, R26E, Eddy County, New Mexico. This cross-section shows four wells drilled by rotary drilling and logged electrically. The resulting gamma ray log allows formation identification and correlation. These data appear on the left side of the well bore. On the right side of each well is a driller's log (from water well drilling) of a well in each section with the rotary drilled well. They are not the same wells - the rotary and the water well - just each in the same section. This is done to compare the quality of information of the two types of logs. The cross section shows the slow truncating of the Seven Rivers Formation. The other formations do not rise to land surface in this section. The trace of a NE trending fault is shown between the well in section 11 and the one in section 12.

The land surface consists of the weathered wedges of the different formations on which lies a veneer of soil derived from the

weathered material. In the valley floor adjacent to the Pecos River, there is an alluvium bed 32 feet thick overlying the Seven Rivers Formation. The alluvium extends a few hundred feet on either side of the river. The bed has been placed there by river waters in times past.

In the drainage ways of the eastward flowing streams (Eagle Creek), there is alluvium derived from the beds further west.

The Seven Rivers Formation consists of fine shaly sand with salt cement, shale, anhydrite, and minor amounts of dolomite. Much of the anhydrite in the weathered area has turned to gypsum. At the Pecos River, the remnant of the Seven Rivers Formation is 250 feet thick.

The Queen Formation underlying the Seven Rivers consists of a thick bed of fine red sand with salt cement at the top with shale and anhydrite predominating in the balance of the bed. The Queen is 375 feet thick at the Pecos River.

The Grayburg and San Andres Formations are below the general area of investigation in this report. The San Andres Formation contains the artesian water zone of the Roswell Basin.

The major formational structure is a monocline extending from the mountains on the west to the bottom of the Permian Basin on the east. This monocline is broken by fractures along the hinge-line of the basin.

#### Geomorphology

The Pecos River flowing generally north-south in the area is the main drainage. The Pecos River heads about 250 miles north of Artesia. The river flows south and southeast until it joins the Rio Grande in Texas. The river is the principal tributary of the Rio Grande in the United States.

The Pecos River, in time past, captured the eastward flowing streams that prevailed in Pliocene time (Plummer, 1932). The principal erosion of the Permian beds to the west was done by the eastward flowing stream over several million years from the Triassic to capture in the Pliocene. The Pecos River has removed much of the valley fill deposited by those streams in an area between the mountains on the west and the Llano Estacado on the east.

The general average flow in the river for the five months, November through March, is 63 cfs (cubic feet per second). The flow is much greater when water is being released from the dams near Ft. Sumner. This is done on an intermittent basis from late March to September. Additionally, flood flows of varying size occasionally run in the river. The average river flow for the water year ending September 30, 1980, was 180 cfs.

Eagle Creek is an eastward trending stream bed going through the City of Artesia. Ninety percent of the time or more, the stream is dry. The creek heads in the foothills of the Sacramento Mountains in the west. It ends at the Pecos River. The entrance point to the Pecos is .4 miles (airline) northwest of the refinery's evaporation ponds. The creek is subject to occasional flooding; the last in 1964.

The Pecos River is also subject to occasional flooding. The dams near Ft. Sumner, New Mexico, (the Los Esteros and Alamogordo) prevent the severe floods of long ago. Data from the Design Memorandum #3, US Corps of Engineers, Los Esteros Dam, January 1970, shows the capacity of the river channel at Artesia is 8,500 cfs. Other data from this report are:

Flood	CFS
2 year	5,200
5 year	14,000
10 year	23,000
20 year	35,000
30 year	41,000

The U.S. Geological Survey records show the maximum flood of record (76 years, 1906-81, inclusive) to have been on May 30, 1937, at 51,500 cfs maximum flow. Previous to the period of record, three floods were recorded down river (not at Artesia). In August, 1893, a flood did severe damage to Lake McMillan and washed out Lake Avalon.. In October, 1904, another flood damaged Lake McMillan. The third flood was in July, 1905, with 50,000 cfs measured below the Rio Penasco. How much of the flood water came down the Pecos past Artesia and how much came in from tributaries south of Artesia is not known.

Data from a New Mexico State Engineer publication covering the period of 54 years, 1906-59, are:

Flood	Times	Duration
2 year*	12	81 days
5 year	8	28 days
10 year	4	11 days
20 year	1	1 day
30 year	2	2 days

\* exceeding channel fill

Between 1931 and 1973, other data show flow duration and average discharge:

0.1% of the time	13,700 cfs
0.2% of the time	8,700 cfs

All other flows less than channel fill.

Flooding of the Pecos River, at Artesia, is minor in washing effect even though appearance indicates a great body of water. The Federal Highway #82 grade east of Artesia forms a barrier. In a flood, water cannot move rapidly through the river bridge and overflow openings; hence, a lake two miles wide is formed in the valley floor north of the highway grade. The bridge and overflow openings act as a controlled release outlet.

#### Climate

The climate of the area is characterized by hot summers and cool winters. In the summer, temperatures rise to 102° while in winter they drop below freezing a few times. The highest recorded temperature in Eddy County was 116° at Artesia, June, 1916. The lowest was -35°, also at Artesia, in February, 1933.

At Artesia, with 60 years of record, the mean temperature is 59°F with a mean high in July of 79°F and a mean low in January of 41°F. Potential evaporation is 51" per year with a high of 9" in July and a low of .74" in December-January (Summers & Associates, "New Mexico Climatological Data, 1975").

Roswell, New Mexico, has the longest and most continuous weather records in this area. The records commence in 1878. For the 104 year of record (through 1981), the average precipitation is 13.33" per year. This, however, masks considerable variation. From 1978-1900, inclusive, the 23 years averaged 17.5" per year. In the 25 year period from 1943-1967, inclusive, the precipitation averaged 9.6" per year - a drought period. The periods 1901-1942 and 1968-1981, inclusive, averaged close to the long term average. Nearly 80% of the rainfall falls in the period from May through October. Some snow falls in the winter and contributes to the total precipitation.

The evaporation pans at the Bitter Lakes Wildlife Refuge, northeast of Roswell, with eleven years of record, have a mean evaporation of 93.8" per year. The wind over the pans, based on 16 years of record, had a mean of 20,066 miles per year.

At Lake Avalon, for ten years of record, 1952-1961, the evaporation mean was 112.75" per year. Evaporation from Class A measuring pans ranges from 100-110 inches per year and lake evaporation, from 66-72 inches per year. Mean wind movement in the ten year period, 1952-1961, was 29,042 miles per year (Soil Conservation Service).

The U.S. Soil Conservation Service published, in 1972, a map of the state showing "Gross Annual Lake Evaporation, New Mexico". This map shows the Pecos River area at Artesia to be in the 80+" per year. This is an annual rate of 97" per year for small ponds. Winds across small water bodies do not become saturated with moisture as they do in crossing large bodies of water.

## Soil

The soil west of the Pecos River, in the vicinity of Artesia, is derived primarily from the weathered wedge edge of the Seven Rivers and Queen Formations - Permian beds. The Seven Rivers Formation extends about six miles west of the river, followed in turn by the Queen Formation.

In the drainage ways, such as Eagle Creek, there is a well drained, moderately dark colored, calcareous soil developed in alluvium derived from limestone.

The soil is from a few inches to about 15 feet in maximum depth. In the valley floor adjacent to the river there is 32 feet of very fine sandy loam - the alluvium - with 2-5 feet being soil. Organic matter content is low or very low and natural fertility is moderate. The soil is moderately to strongly saline. The water table is about six feet deep.

These soils derived from Permian beds are in part gypsiferous and saline, reflecting their parent rock. The low-rainfall climate has limited the amount of leaching of salts and other minerals.

In an area 2½ miles wide and striking SW-NE is a band of gypsum land with poor soil. Hollows and drainage areas provide some better soil. The strong outcropping is the weathered basal Seven Rivers Formation. This outcropping has been cut off southwestward by Eagle Creek, which eroded the area and covered some of it with alluvium derived from the limestone areas to the west. However, the basal bed extends on to the southwest under the soil mantle. Gypsum is found at shallow depths. Rainfall and return irrigation water on these soils leach the salt and minerals - especially the calcium sulfate - and cause much of the aquifer water to be of poor quality - high in total dissolved solids.

The sands of the Queen Formation outcrop further west. These sands leach more readily, thus they have less residual minerals and provide a fair aquifer with a better quality water. None is as good as the artesian water from the San Andres Formation.

Carbonate rocks make up a complex pattern in the mountains and hills of the western area. The soil there is thin, partly due to the slower disintegration of the limestone and partly to the steeper slopes which allow soil to be washed away.

The "Harkey" soil close to the river is a very fine sandy loam with 0 to 1% slope. The available moisture holding capacity per foot of soil depth is 1.8" or 15%. The soil above the water table is a maximum of six feet in depth.

# GL... EDDY AREA, NEW MEXICO

Scale 1:506880  
1 0 1 2 3 4 5 6 7 8 Miles



## SOIL ASSOCIATIONS

- 1 Limestone rock land-Ector association: Rock land and very shallow, stony and rocky, loamy soils over limestone; on hills and mountains
- 2 Reagan-Upton association: Loamy, deep soils and soils that are shallow to caliche; from old alluvium
- 3 Reeves-Gypsum land-Cottonwood association: Loamy soils that are very shallow to moderately deep over gypsum beds, and Gypsum land
- 4 Kimbrough-Stegall association: Loamy soils that are very shallow to moderately deep to caliche; from old alluvium
- 5 Kermit-Berino association: Sandy, deep soils from wind-worked mixed sand deposits
- 6 Simona-Pajarito association: Sandy, deep soils and soils that are shallow to caliche; from wind-worked deposits
- 7 Arno-Harkey-Anthony association: Loamy, deep soils from recent mixed alluvium

## Hydrology

In the Roswell Basin of the Pecos River, there are two water aquifers. One is the deep artesian zone in the San Andres Formation. The other is the shallow aquifer. In reality, the shallow aquifer has three different reservoirs: 1) the alluvium adjacent to the Pecos River; 2) the remnant of valley fill from Pliocene time which fill is generally in the area from north of Dexter to Lake Arthur; and, 3) the weathered areas of the Artesia Group, particularly the sand beds of the Seven Rivers and Queen Formations.

The three reservoirs have very different transmissibilities for water. The alluvium was tested in several wells for a value of 11,600 gpd (gallons per day per foot of reservoir). A value of 12,000 gpd has been used for general calculations (Hantush, 1955). The "Pliocene" valley fill has values from 91,500 to 139,000 gpd with an average of the wells tested of 105,000 gpd. The weathered Permian beds have values from 31,100 to 72,000 gpd with an average of 45,000 gpd for the wells tested. Hantush assigned a value of 100,000 gpd to the entire shallow aquifer.

The Artesia Group, where unweathered, is the aquitard which confines water in the San Andres Formation and gives rise to the artesian system.

Prior to 1930, only 3% of irrigation water came from the shallow aquifer. Leaky artesian wells, poorly constructed artesian wells, and return irrigation water began to fill the shallow aquifer. This trend increased rapidly after 1940.

Recharge of the shallow aquifer is from local precipitation on the outcrop of the Artesia Group, from surface drainage, irrigation losses, and from artesian well leakage. The river valley alluvium gets some recharge from the Pecos River when flows are high. Surface drainage in the Pecos River is a put and take operation. Inflow when storage release or flood flows are in the channel, and outflow at base flow periods.

The direction of flow in the shallow aquifer is southeast - see the attached portion of a shallow aquifer water level map by G. E. Welder. Near the river, the flow is into the river when possible and otherwise southerly parallel to the river.

The vadose zone in the valley is the fine sandy loam. The zone thickness is six feet. West of the valley the vadose zone is from a few inches to a few feet. The sand aquifers of the Seven Rivers and Queen Formations are miniature confined reservoirs. The gypsum (or anhydrite) and shale are aquitards here similar to the Artesia Group's effect on the San Andres water. The water in most of the sands rises above the confining bed when tapped.

Most of the water in the alluvium aquifer, adjacent to the river, percolates southward or a little southeastward towards Lake McMillan. The flood plain south of U.S. Highway #82 is filled with salt cedars - phreatophytes - which consume nearly all of the water before it reaches the lake.

#### Water Quality

The quality of water in the shallow aquifer is from poor to bad. The chemical character of the water in a basin is governed by the character of the rocks over or through which the water moves. The Permian rocks and their derivatives are loaded with soluble salts and minerals.

The chemical quality of the Pecos River varies according to the principal source of riverflow. During the periods of low stage the water in the river in the Acme-Artesia reach is largely effluent ground water; therefore, the surface water is similar in chemical character and concentration to the ground water. Evaporation from the river increases the amount of dissolved solids in the river water. During flood flows and water releases from the dams upstream, the river water has a lower mineral content than during periods of low flow. River water between Acme and Artesia gains in mineral content primarily in chlorides and sulfates.

On March 19, 1981, the Pecos River water was sampled for analysis at both Acme and Artesia by the U.S. Geological Survey. Partial results of the laboratory analysis are:

	<u>Acme</u>		<u>Artesia</u>	
Calcium + Magnesium	690	ppm or mg/L	980	ppm or mg/L
Sodium + Potassium	475		2215	
Chloride	760		3800	
Flouride	0.6		0.8	
Sulfate	1900		2600	
Alk. Total Lab	84		84	
Specific Conductance Lab	5100	micromhos	13600	micromhos

Specific Conductance is a measure of the mineral content of water. It is not an exact measure of total dissolved solids but is indicative of their quantity. In the table following which gives water quality in a number of wells, both specific conductance and total dissolved solids were given for 12 wells. The average ratio was TDS equal .765 times specific conductance.

The U.S. Public Health Service states that good quality potable water shall not have over 500 ppm of total dissolved solids, and up to 1,000 ppm where no better quality is available.



# Water Quality Table

Specific Conductance (Sp. Con.) and Total Dissolved Solids (TDS). Years prior to 1981 by USGS. The 1981 data from samples by E. E. Kinney.

<u>Location</u>	<u>Year</u>	<u>Sp. Con.</u>	<u>TDS</u>
17.25.12.120	1955	1280 mm	
14.141	40	946	704 ppm
22.220	49	869	528
24.344	39	972	702
17.26. 1.433	81		16800
.444	81		14200
2.330	81		2740
3.330	81		1700
.430	81		3500
4.121	40	2540	2060
7.131	57	1250	
	58	1270	
	59 3/3	1280	
	9/9	1290	
.333	39	1220	
10.230	81		3380
.333a	40	2980	2500
.333	81		1520
.430	81		884
.433a	55	2020	
11.310	81		4320
12.111	81		19700
.121	81		7730
.124a	81		4770
.124b	81		11200
.214	81		3200
.224a	81		10400
.224b	81		2930
13.310	54	1070	
14.210	51	4330	3110
15.313	39	969	736
.411	40	2040	1640
22.233	39	1940	1680
.240	54	2510	
23.130	54	2820	
.200	54	1710	
29.113	40	1140	920
17.27.18.100	39	12000	8590

The well in 17.27.18.100 was on the west side of the Pecos River near where the present U.S. #82 highway bridge crosses the river. The wells in 17.25 are west of Artesia in the area of the Queen outcrop. The wells in 17.26 draw their water from the Permian Seven Rivers Formation and from the alluvium adjacent to the river.

The table of water quality shows that the shallow water is poor to bad, as previously stated. The water is suitable for domestic use in a few wells and then only when better water is not available. A few wells to the west had total dissolved solids less than 1,000. The water in the alluvium is very poor and not suitable for drinking. It can be used to a limited extent for some irrigation although the writer does not know of any so being used.

#### Summary

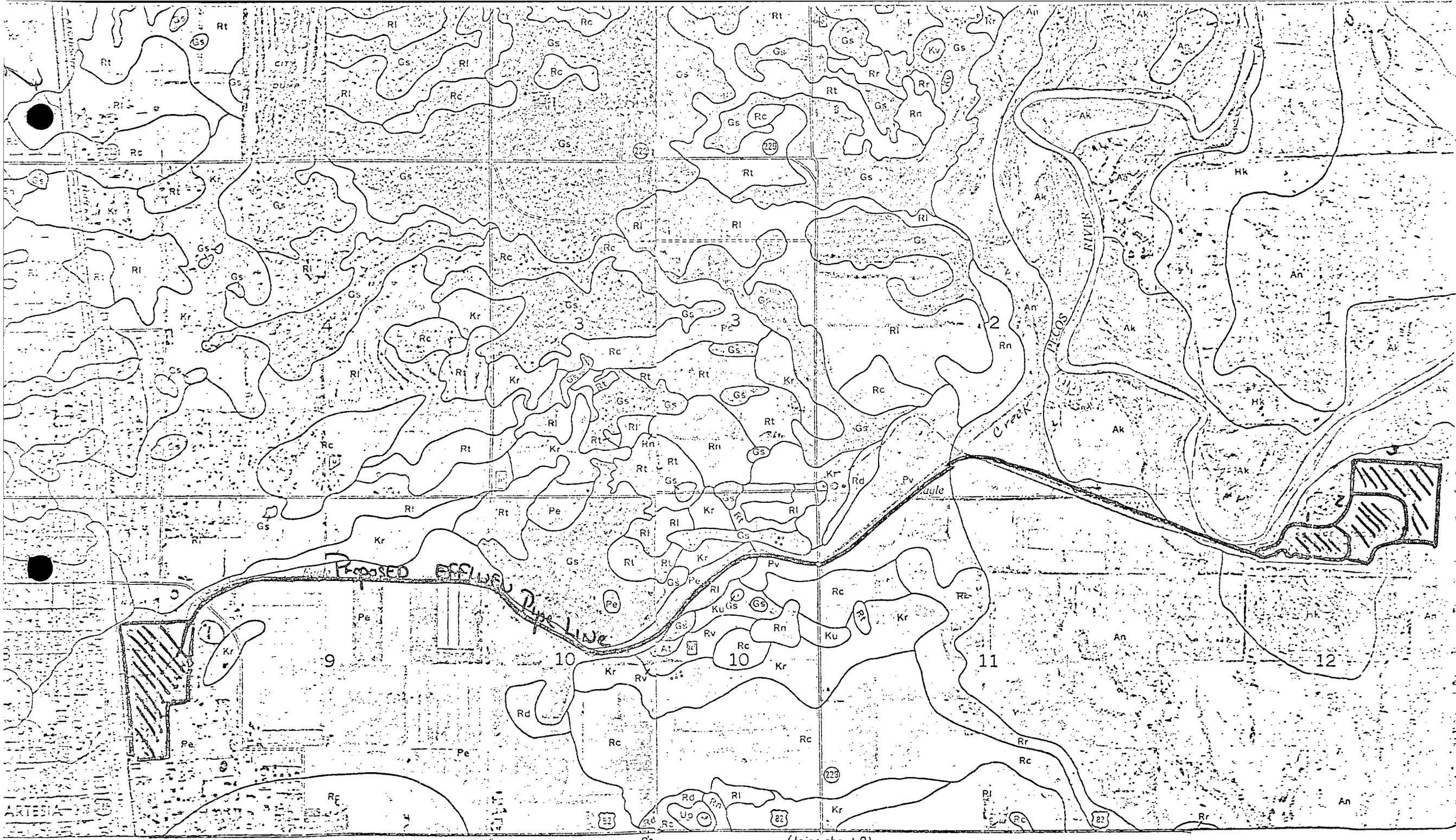
The effluent stream leaving the Navajo refinery to the evaporation ponds will be an enclosed piped system, which will be in place during the 1982-1983 fiscal year. In conjunction with the piped system, Navajo will install another oil/water separator of the CPI type capable of removing the solids content down to 7 ppm and all oil droplets of 20 micron size and larger.

Researches are being conducted at the present time in the area of water recovery for agricultural purposes. This research hopefully will be conducted as a joint venture with New Mexico State University.

Appendix D shows the quality of water in the evaporation ponds and also the surrounding areas. In light of the data furnished, we feel that the water in our effluent stream isn't of such quality that it will affect the existing ground water under our evaporation ponds.

We will be able to monitor the surrounding ground water through our existing monitor wells (see Appendix E) to assure that the present level of water quality will be maintained.

We therefore request that a discharge permit be granted to Navajo Refining Company, based on the data furnished.



(Joins sheet 9)

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P.O. Box 526  
Artesia, NM. 88210  
Edward E. Kinney  
106128

# Appendix B

## REPORT OF ANALYSIS

SAMPLES RECEIVED		5/20/81		P.O. #20030		
CUSTOMER ORDER NUMBER						
Water						
TYPE OF ANALYSIS						
Sample Identification	Type of Analysis		mg/l			
Plant Discharge	Aluminum	<	0.1			
	Arsenic		0.08			
	Barium	<	0.1			
	Boron		1.0			
	Cadmium		0.003			
	Chloride		4545			
	Chromium		1.4			
	Cobalt		0.61			
	Copper	<	0.001			
	Cyanide		22			
	Fluoride		15			
	Iron		3.8			
	Lead		0.005			
	Manganese		0.06			
	Mercury (total)	<	0.0004			
	Molybdenum	<	0.001			
	Nickel		0.09			
	Nitrogen, Nitrate (as N)		0.4			
	pH units		3.5			
	Phenols		*			
	Selenium		0.05			
	Silver	<	0.01			
	Solids, Total Dissolved		8690			
	Sulfate		1140			
	Zinc		0.4			
		Radium-226		1.8 ± 1.2	pCi/l	
		Radium-228	<	1	pCi/l	
		Total Uranium	<	5 ug/l		

\* Results to follow due to organic contamination resulting in matrix problem with color reagent.



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CUSTOMER Navajo Refining Company  
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CITY Artesia, New Mexico 88210  
ATTENTION Edward E. Kinney  
INVOICE NO. 106128

# REPORT OF ANALYSIS

SAMPLES RECEIVED	5/20/81	CUSTOMER ORDER NUMBER	P.O. # 20030
TYPE OF ANALYSIS			
Water			
<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/l</u>	
Ditch at Ponds	Phenols	9.9	
Plant Discharge	Phenols	5.3	

These samples were high in oil content. The Phenol Analysis was performed after an alkaline extraction cleanup was done. (See Standard Methods 14th edition)



6/19/81

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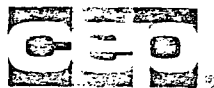
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106128

Appendix C

# REPORT OF ANALYSIS

P.O. #20030

5/20/81		CUSTOMER ORDER NUMBER		
Water				
TYPE OF ANALYSIS				
Sample Identification	Type of Analysis		mg/l	
City of Artesia Sewage Effluent	Aluminum	<	0.1	
	Arsenic	<	0.01	
	Barium	<	0.1	
	Boron		0.5	
	Cadmium	<	0.001	
	Chloride		202	
	Chromium		0.003	
	Cobalt		0.01	
	Copper		0.002	
	Cyanide		0.16	
	Fluoride		1.3	
	Iron		0.02	
	Lead	<	0.001	
	Manganese		0.006	
	Mercury (total)	<	0.0004	
	Molybdenum		0.001	
	Nickel	<	0.01	
	Nitrogen, Nitrate (as N)	<	0.1	
	pH units		7.2	
	Phenols		0.02	
	Selenium	<	0.01	
	Silver	<	0.01	
	Solids, Total Dissolved		1220	
	Sulfate		444	
	Zinc	<	0.1	
		Radium-226		2.4 ± 1.4 pCi/l
		Radium-228	<	1 pCi/l
	Total Uranium		5 ug/l	



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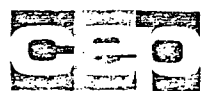
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106128

# REPORT OF ANALYSIS

5/20/81		P.O. #20030		
SAMPLES RECEIVED		CUSTOMER ORDER NUMBER		
Water				
TYPE OF ANALYSIS				
Sample Identification	Type of Analysis		mg/l	
Haldeman 17-26-11-210	Aluminum	<	0.1	
	Arsenic	<	0.01	
	Barium	<	0.1	
	Boron		1.0	
	Cadmium	<	0.001	
	Chloride		300	
	Chromium		0.001	
	Cobalt		0.02	
	Copper		0.001	
	Cyanide	<	0.1	
	Fluoride		0.84	
	Iron	<	0.01	
	Lead		0.002	
	Manganese		0.005	
	Mercury (total)	<	0.0004	
	Molybdenum		0.001	
	Nickel		0.04	
	Nitrogen, Nitrate (as N)		6.4	
	pH units		7.4	
	Phenols	<	0.001	
	Selenium		0.02	
	Silver	<	0.01	
	Solids, Total Dissolved		4320	
	Sulfate		2380	
	Zinc	<	0.1	
		Radium-226	<	0.6 pCi/l
		Radium-228	<	1 pCi/l
	Total Uranium		40 ug/l	



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# REPORT OF ANALYSIS

P.O. #20030

5/20/81  
SAMPLES RECEIVED CUSTOMER ORDER NUMBER

Water  
TYPE OF ANALYSIS

Sample Identification	Type of Analysis	mg/l
Bolton SW SW SW 10-17-26  17-26-10-330	Aluminum	< 0.1
	Arsenic	< 0.01
	Barium	< 0.1
	Boron	0.4
	Cadmium	< 0.001
	Chloride	200
	Chromium	0.001
	Cobalt	< 0.01
	Copper	< 0.001
	Cyanide	< 0.1
	Fluoride	0.58
	Iron	< 0.01
	Lead	0.001
	Manganese	< 0.001
	Mercury (total)	< 0.0004
	Molybdenum	0.001
	Nickel	0.02
	Nitrogen, Nitrate (as N)	4.0
	pH units	8.2
	Phenols	0.008
	Selenium	< 0.01
	Silver	< 0.01
	Solids, Total Dissolved	1520
	Sulfate	216
	Zinc	< 0.1
	Radium-226	< 0.6 pCi/l
	Radium-228	< 1 pCi/l
Total Uranium	< 5 ug/l	



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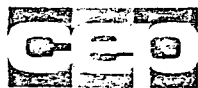


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# REPORT OF ANALYSIS

SAMPLES RECEIVED 5/20/81		P.O. #20030	
TYPE OF ANALYSIS Water		CUSTOMER ORDER NUMBER	
<u>Sample Identification</u>	<u>Type of Analysis</u>		<u>mg/l</u>
Alvarado 17-26-10-430 <i>Domestic</i>	Aluminum	<	0.1
	Arsenic	<	0.01
	Barium	<	0.1
	Boron		0.2
	Cadmium	<	0.001
	Chloride		51
	Chromium	<	0.001
	Cobalt		0.02
	Copper	<	0.001
	Cyanide	<	0.1
	Fluoride		0.86
	Iron	<	0.01
	Lead	<	0.001
	Manganese		0.02
	Mercury (total)	<	0.0004
	Molybdenum	<	0.001
	Nickel	<	0.01
	Nitrogen, Nitrate (as N)	<	0.1
	pH units		7.8
	Phenols		0.012
	Selenium	<	0.01
	Silver	<	0.01
	Solids, Total Dissolved		884
	Sulfate	<	534
	Zinc	<	0.1
	Radium-226		0.7 ± 0.3 pCi/l
	Radium-228	<	1 pCi/l
	Total Uranium	<	5 ug/l



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# REPORT OF ANALYSIS

5/20/81		P.O. #20030		
SAMPLES RECEIVED		CUSTOMER ORDER NUMBER		
Water				
TYPE OF ANALYSIS				
North of Ditch				
Sample Identification	Type of Analysis		mg/l	
Alvarado 17-26-3-430 Domestic	Aluminum	<	0.1	
	Arsenic	<	0.01	
	Barium	<	0.1	
	Boron		0.6	
	Cadmium		0.001	
	Chloride		808	
	Chromium		0.001	
	Cobalt		0.07	
	Copper	<	0.001	
	Cyanide	<	0.1	
	Fluoride		0.74	
	Iron	<	0.01	
	Lead		0.003	
	Manganese		0.002	
	Mercury (total)	<	0.0004	
	Molybdenum		0.001	
	Nickel		0.04	
	Nitrogen, Nitrate (as N)		5.4	
	pH units		7.4	
	Phenols		0.029	
	Selenium		0.02	
	Silver	<	0.01	
	Solids, Total Dissolved		3500	
	Sulfate		227	
	Zinc	<	0.1	
		Radium-226	<	0.6 pCi/l
		Radium-228	<	1 pCi/l
	Total Uranium		12 ug/l	



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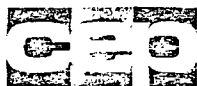
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# REPORT OF ANALYSIS

5/20/81		P.O. #20030		
SAMPLES RECEIVED		CUSTOMER ORDER NUMBER		
Water				
TYPE OF ANALYSIS				
North of Ditch				
Sample Identification	Type of Analysis	mg/l		
City of Artesia 17-26-2-230 Domestic	Aluminum	<	0.1	
	Arsenic	<	0.01	
	Barium	<	0.1	
	Boron		0.5	
	Cadmium	<	0.001	
	Chloride		202	
	Chromium		0.001	
	Cobalt		0.01	
	Copper		0.003	
	Cyanide	<	0.1	
	Fluoride		1.2	
	Iron	<	0.01	
	Lead	<	0.001	
	Manganese		0.004	
	Mercury (total)	<	0.0004	
	Molybdenum		0.002	
	Nickel		0.01	
	Nitrogen, Nitrate (as N)		3.7	
	pH units		7.6	
	Phenols		0.037	
	Selenium		0.01	
	Silver	<	0.01	
	Solids, Total Dissolved		1700	
	Sulfate		297	
	Zinc		0.4	
	Radium-226	<	0.6	pCi/l
	Radium-228	<	1	pCi/l
Total Uranium		12	ug/l	



6/17/81

APPROVED BY

James J. Mueller, President  
PAGE 1 OF 1 PAGE

Controls for Environmental Pollution, Inc.

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Telephone 305/982-9341

CUSTOMER Navajo Refining Company  
ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

Appendix D

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 13	Acidity	11
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	0.1
	Biochemical Oxygen Demand	22
	Cadmium	0.002
	Chemical Oxygen Demand	48
	Chloride	357
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.001
	Fluoride	1.2
	Hardness (as $\text{CaCO}_3$ )	1570
	Iron	0.02
	Lead	0.003
	Magnesium	79
	Nickel	< 0.01
	pH Units	7.4
	Phenols	< 0.001
	Alkalinity, "M"	146
	Solids, Total Dissolved	3200
Sulfate	1810	
Sulfide	0.04	
Zinc	< 0.1	

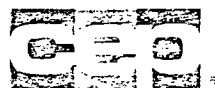
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5 day incubation

pH: electrode



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4/30/81 PAGE 11 OF 13 PAGE

CUSTOMER Navajo Refining Company  
ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

Sample Identification	Type of Analysis	mg/liter
Navajo Well # 17	Acidity	17
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	0.1
	Biochemical Oxygen Demand	42
	Cadmium	0.03
	Chemical Oxygen Demand	88
	Chloride	4692
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	< 0.001
	Fluoride	0.3
	Hardness (as $\text{CaCO}_3$ )	4470
	Iron	0.03
	Lead	0.005
	Magnesium	470
	Nickel	0.01
	pH Units	7.6
	Phenols	< 0.001
	Alkalinity, "M"	198
	Solids, Total Dissolved	11,200
	Sulfate	2,930
Sulfide	0.03	
Zinc	0.1	

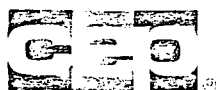
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5-day incubation

pH: electrode



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4/30/81 PAGE 13 OF 13 PAGE

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ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 16	Acidity	13
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	< 0.1
	Biochemical Oxygen Demand	44
	Cadmium	0.002
	Chemical Oxygen Demand	152
	Chloride	1173
	Chromium	< 0.001
	Chromium 6+	< 0.01
	Copper	< 0.001
	Fluoride	0.44
	Hardness (as $\text{CaCO}_3$ )	1610
	Iron	< 0.01
	Lead	0.002
	Magnesium	140
	Nickel	< 0.01
	pH Units	7.7
	Phenols	0.016
	Alkalinity, "M"	425
	Solids, Total Dissolved	4,770
Sulfate	1,890	
Sulfide	0.10	
Zinc	0.1	

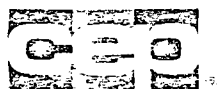
Sample Analysis by: BP

Date and Time of Analysis: BOD<sub>5</sub>: 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis: BOD<sub>5</sub> - 5<sup>th</sup> day incubation

pH: electrode



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INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81

CUSTOMER ORDER NUMBER P.O. #20030

TYPE OF ANALYSIS Water

Sample  
Identification

Type of  
Analysis

mg/liter

Navajo Well #12

Phenols

≤ 0.001

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NAVAJO REFINING CO.



4/30/81

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PAGE 1 OF 1 PAGE

Assurance

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ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 12	Acidity	55
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	< 0.1
	Biochemical Oxygen Demand	38
	Cadmium	0.07
	Chemical Oxygen Demand	256
	Chloride	8058
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.002
	Fluoride	0.9
	Hardness (as $\text{CaCO}_3$ )	8920
	Iron	0.04
	Lead	0.007
	Magnesium	1330
	Nickel	0.02
	pH Units	7.6
	Phenols	* < 0.001
	Alkalinity, "M"	545
	Solids, Total Dissolved	28,900
	Sulfate	11,500
	Sulfide	0.05
	Zinc	< 0.1

\* Data will follow on 5/6/81.

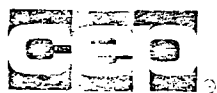
Sample Analysis by: BP

Date and Time of Analysis: BOD<sub>5</sub>: 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis: BOD<sub>5</sub> - 5 day incubation

pH: electrode



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ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 9	Acidity	36
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	< 0.1
	Biochemical Oxygen Demand	36
	Cadmium	0.01
	Chemical Oxygen Demand	88
	Chloride	2703
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.006
	Fluoride	0.7
	Hardness (as $\text{CaCO}_3$ )	3120
	Iron	0.01
	Lead	0.001
	Magnesium	370
	Nickel	< 0.01
	pH Units	7.7
	Phenols	< 0.001
	Alkalinity, "M"	322
	Solids, Total Dissolved	10,400
Sulfate	4160	
Sulfide	0.03	
Zinc	< 0.1	

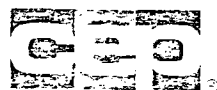
Sample Analysis by: BP

Date and Time of Analysis: BOD<sub>5</sub>: 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis: BOD<sub>5</sub> - 5-day incubation

pH: electrode



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ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 7	Acidity	36
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	< 0.1
	Biochemical Oxygen Demand	38
	Cadmium	0.04
	Chemical Oxygen Demand	136
	Chloride	3570
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.004
	Fluoride	0.3
	Hardness (as $\text{CaCO}_3$ )	3160
	Iron	0.05
	Lead	0.001
	Magnesium	370
	Nickel	< 0.01
	pH Units	8.0
	Phenols	< 0.001
	Alkalinity, "M"	596
	Solids, Total Dissolved	14,200
	Sulfate	5600
Sulfide	0.05	
Zinc	< 0.1	

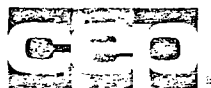
Sample Analysis by: BP

Date and Time of Analysis: BOD<sub>5</sub>: 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis: BOD<sub>5</sub> - 5 day incubation

pH: electrode



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INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 5	Acidity	36
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	0.1
	Biochemical Oxygen Demand	24
	Cadmium	0.05
	Chemical Oxygen Demand	176
	Chloride	7089
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.001
	Fluoride	0.44
	Hardness (as $\text{CaCO}_3$ )	4660
	Iron	0.04
	Lead	0.007
	Magnesium	650
	Nickel	< 0.01
	pH Units	7.7
	Phenols	< 0.001
	Alkalinity, "M"	506
	Solids, Total Dissolved	16,800
Sulfate	4290	
Sulfide	0.13	
Zinc	< 0.1	

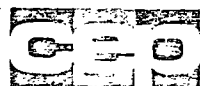
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5 day incubation

pH: electrode



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4/30/81 PAGE 7 OF 13 PAGE

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# REPORT OF ANALYSIS

SAMPLES RECEIVED	4/24/81	CUSTOMER ORDER NUMBER	P.O. # 20030
TYPE OF ANALYSIS	Water		

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well # 3	Acidity	32
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1.0
	Barium	< 0.1
	Biochemical Oxygen Demand	40
	Cadmium	0.009
	Chemical Oxygen Demand	73
	Chloride	2652
	Chromium	< 0.001
	Chromium 6+	< 0.01
	Copper	< 0.001
	Fluoride	1.6
	Hardness (as $\text{CaCO}_3$ )	2760
	Iron	0.01
	Lead	< 0.001
	Magnesium	250
	Nickel	< 0.01
	pH Units	7.4
	Phenols	< 0.001
	Alkalinity, "M"	356
	Solids, Total Dissolved	7730
	Sulfate	2720
	Sulfide	0.10
	Zinc	< 0.1

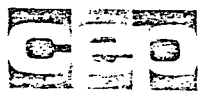
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5 day incubation

pH: electrode



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4/30/81

PAGE 6 OF 13 PAGE

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ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81 CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo East Pond	Acidity	10
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1
	Barium	< 0.1
	Biochemical Oxygen Demand	72
	Cadmium	0.002
	Chemical Oxygen Demand	225
	Chloride	1632
	Chromium	0.1
	Chromium 6+	< 0.01
	Copper	0.002
	Fluoride	5.8
	Hardness (as $\text{CaCO}_3$ )	1160
	Iron	0.1
	Lead	< 0.001
	Magnesium	110
	Nickel	< 0.01
	pH Units	7.2
	Phenols	< 0.001
	Alkalinity, "M"	214
	Solids, Total Dissolved	4920
Sulfate	1520	
Sulfide	0.36	
Zinc	< 0.1	

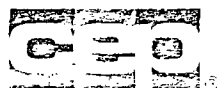
Sample Analysis by: BP

Date and Time of Analysis: BOD<sub>5</sub>: 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis: BOD<sub>5</sub> - 5 day incubation

pH: electrode



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ADDRESS Box 526  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

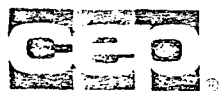
SAMPLES RECEIVED 4/24/81

CUSTOMER ORDER NUMBER P.O. #20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo Well #1	Acidity	179
	Alkalinity, "P" (As $\text{CaCO}_3$ )	< 1
	Barium	0.1
	Biochemical Oxygen Demand	44
	Cadmium	0.05
	Chemical Oxygen Demand	145
	Chloride	8313
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.001
	Fluoride	0.9
	Hardness (as $\text{CaCO}_3$ )	5760
	Iron	0.05
	Lead	0.006
	Magnesium	850
	Nickel	0.02
	pH Units	7.8
	Phenols	0.015
	Alkalinity, "M"	700
	Solids, Total Dissolved	19700
Sulfate	4920	
Sulfide	0.21	
Zinc	< 0.1	

Sample Analysis by: B.P.  
Date and Time of Analysis:  $\text{BOD}_5$  - 4/24/81 @ 1600 hrs.  
pH: 4/30/81 @ 1400 hrs.  
Method of Analysis:  $\text{BOD}_5$  - 5 day incubation  
pH: electrode



4/30/81

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Controls for Environmental Pollution, Inc.

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REPORT OF  
ANALYSIS

NAVAJO REFINING CO.

SAMPLES RECEIVED 4/24/81

CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Well Water	Acidity	13
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1
	Barium	< 0.1
	Biochemical Oxygen Demand	38
	Cadmium	0.002
	Chemical Oxygen Demand	88
	Chloride	1632
	Chromium	0.002
	Chromium 6+	< 0.01
	Copper	0.004
	Fluoride	0.25
	Hardness (as $\text{CaCO}_3$ )	2400
	Iron	0.06
	Lead	0.005
	Magnesium	310
	Nickel	< 0.01
	pH Units	7.8
	Phenols	0.022
	Alkalinity, "M"	205
	Solids, Total Dissolved	6860
Sulfate	2830	
Sulfide	0.03	
Zinc	0.2	

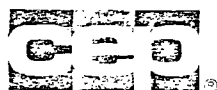
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5 day incubation

pH: electrode



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CUSTOMER Navajo Refining Company  
ADDRESS Drawer 159  
CITY Artesia, NM 88210  
ATTENTION Ed Kinney  
INVOICE NO. 104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED	4/24/81	CUSTOMER ORDER NUMBER	P.O. # 20030
TYPE OF ANALYSIS Water			
<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>	
Navajo Middle Pond	Acidity	29	
	Alkalinity, "P" (as $\text{CaCO}_3$ )	<	1
	Barium	<	0.1
	Biochemical Oxygen Demand	116	
	Cadmium	0.002	
	Chemical Oxygen Demand	363	
	Chloride	1468	
	Chromium	0.1	
	Chromium 6+	<	0.01
	Copper	<	0.001
	Fluoride	7.4	
	Hardness (as $\text{CaCO}_3$ )	1060	
	Iron	0.06	
	Lead	<	0.001
	Magnesium	96	
	Nickel	<	0.01
	pH Units	7.4	
	Phenols	0.027	
	Alkalinity, "M"	349	
	Solids, Total Dissolved	4020	
Sulfate	1050		
Sulfide	13.4		
Zinc	<	0.1	

Sample Analysis by: BP  
Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.  
pH: 4/30/81 @ 1400 hrs.  
Method of Analysis:  $\text{BOD}_5$  - 5 day incubation  
pH: electrode



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4/30/81 PAGE 3 OF 13 PAGE



CUSTOMER  
ADDRESS  
CITY  
ATTENTION  
INVOICE NO.

Navajo Refining Company  
Drawer 159  
Artesia, NM 88210  
Ed Kinney  
104223

# REPORT OF ANALYSIS

SAMPLES RECEIVED 4/24/81

CUSTOMER ORDER NUMBER P.O. # 20030

TYPE OF ANALYSIS Water

<u>Sample Identification</u>	<u>Type of Analysis</u>	<u>mg/liter</u>
Navajo West Pond	Acidity	13
	Alkalinity, "P" (as $\text{CaCO}_3$ )	< 1
	Barium	0.2
	Biochemical Oxygen Demand	116
	Cadmium	0.003
	Chemical Oxygen Demand	102
	Chloride	918
	Chromium	0.04
	Chromium 6+	< 0.01
	Copper	< 0.001
	Fluoride	6.6
	Hardness (as $\text{CaCO}_3$ )	760
	Iron	0.06
	Lead	0.002
	Magnesium	60
	Nickel	0.01
	pH Units	7.7
	Phenols	0.04
	Alkalinity, "M"	173
	Solids, Total Dissolved	2930
	Sulfate	885
Sulfide	25.1	
Zinc	< 0.1	

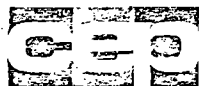
Sample Analysis by: BP

Date and Time of Analysis:  $\text{BOD}_5$ : 4/24/81 @ 1600 hrs.

pH: 4/30/81 @ 1400 hrs.

Method of Analysis:  $\text{BOD}_5$  - 5-day incubation

pH: electrode



APPROVED BY

Elmer D. Martinez, Director of Quality Assurance

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Controls for Environmental Pollution, Inc.

P.O. Box 5251 • 1925 Rosina • Santa Fe, New Mexico 87502

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# INDEPENDENT Survey Study

## REPORT ON WATER DISPOSAL NAVAJO REFINING COMPANY

The Navajo Refining Company operates an oil refinery in Artesia, New Mexico. Fresh water is used in the refining process; part of the water is used to de-salt the incoming crude oil. This saline water and other waste water is delivered via ditch three miles east of the plant to evaporation ponds adjacent to the Pecos River.

The reach of the Pecos River between Acme (16 miles northeast of Roswell) and Artesia is a section of river in which the mineral content of the water increases considerably - especially the chloride and sulfate content. The flow in the river consists of three parts: a.) the base flow. b.) the release of storage water from the reservoirs near Ft. Sumner, N. M.; and c.) runoff from precipitation. Inasmuch as b and c are relatively transitory in time, the measurement of water quality in the river is given by analysis of the base flow (a).

Table #1 shows the chloride and fluoride content at Acme and Artesia as well as the chromium, sulfate, and solids at Artesia as analyzed by the United States Geological Survey (USGS) monthly for the water years 1979 and 1980, ending in September, 1980. The data for 1980 is labeled provisional until published. Chart #1 shows the chloride content at the Artesia bridge sampling point. The great variation is due to time of sampling and the mix of a, b, and c. The average chloride content for the two year period is 1846 parts per million (ppm). The water in the Pecos River is not potable; it is brackish and marginal for agriculture.

Table #1a is a list of minor constituents in the Pecos River water that were analyzed by the USGS.

The Pecos River water quality deteriorates between Acme and Artesia by leaching of the soil on the west by return irrigation water and precipitation runoff and on the east side by precipitation runoff through highly mineralized beds of the Permian (Chalk Bluff Formation).

The valley fill aquifer (30 - 32 feet thick) lies along the river in a narrow belt. The aquifer is composed of fine grained sediments (sand and clay) deposited by the river. The permeability of the formation is low and consequently the transmissibility of water is also low. The aquifer has about 20 feet of saturated zone; the top of which is cut by the river. Water seeps into the river at low flow and outward from the river at high water level. The water in the valley fill is saline like the water in the river. The well #1 is a test of the aquifer water updip 1560 feet northwest of the ponds. This well water tests 8313 ppm chloride, 4920 ppm sulfate, and 19,700 ppm dissolved solids. This is the same irrigation return and precipitation runoff that is found in the river.

In the general area of the ponds, the valley fill water has recharge from the effluent of the City of Artesia's sewage plant. Part of the effluent is used to irrigate pasture located in the S<sub>2</sub>NW<sub>4</sub> Section 12, just southwest of the evaporation ponds. When not used for irrigating, the effluent is discharged into Eagle Draw wherein it ponds adjacent to the river at a distance of  $\frac{1}{2}$  mile northwest of well #1.

The Navajo Refining Company has three ponds containing 85

acres located in Sections 1 & 12, T17S, R26 E, Eddy County, N. M. Observation wells have been dug around the perimeter of the ponds in order to observe the effects, if any, on the ground water in the valley fill aquifer. Wells 1, 3, and 5 were placed on the north or updip side of the ponds. As previously mentioned well #1 is 1560 feet northwest of the ponds and 200 feet from the river. This well measures the water in the valley fill without chance of being effected by the water in the ponds. Wells 7, 9, 12, and 13 were placed to measure the water moving east to the river or south along the water level slope. These wells have slotted casing which allows aquifer water to move through the well bore. Wells 16 and 17 were drilled to test the bottom of the aquifer. In sampling these latter two wells, the water was drawn from the bottom of the well.

The water samples from the observation wells correctly measure the water in the aquifer. A study was made by Rudolph M. Schuller, James P. Gibb, and Robert A. Griffen of proper sampling methods in any monitoring system. The study was financed in part by a grant from the Environmental Protection Agency, Cincinnati, Ohio. The report says, in part, "It is common practice to flush a monitoring well to remove the stagnant water (storage water) in the well casing before sample collection. Although this is common practice, there is again little supportive data to establish the extent of well flushing necessary before a representative sample can be taken from a particular monitoring well." (Emphasis added.)

The table on the next page shows chloride and total dissolved solids (TDS) analyzed in water samples from the listed observation wells over a period of  $3\frac{1}{2}$  years. This data demonstrates that the water is freely moving through the casing slots and well bores. If no water was moving,

then it would be stagnant and the analysis from each well would be essentially the same over the total sampling period.

Well #	C h l o r i d e			Total Dissolved Solids (TDS)		
	Sep '77	Nov '80	Apr '81	Sep '77	Nov '80	Apr '81
1		5800 ppm	8313 ppm		15 800 ppm	19 700 ppm
3	1180 ppm	2200	2652	6 777 ppm	7 640	7 730
5	4565	8600	7089	7 367	21 100	16 800
7	8075	3400	3570	28 050	21 500	14 200
9		2200	2703		9 820	10 400
12	7300	6700	8058	29 840	29 000	28 900
13	123	380	357	2 531	3 060	3 200

The evaporation ponds have been at this location for several decades. The water in the observation wells has been tested over a period of 4 years. The latest sampling was on April 16, 1981, by the undersigned and witnessed by N. Raymond Lamb. The samples were sent by the undersigned to the Controls for Environmental Pollution, Inc., Santa Fe, New Mexico, for analysis. Table #2 is a compilation of the results.

Table #2 shows a cadmium content in 5 wells that is higher than the allowable set by the Water Control Commission. These wells are nearer to the river. Five wells (including the ranch well) show quantities equal to or less than the allowable. Cadmium is not a product of the refinery. Therefore, the cadmium in the water is from an extraneous source. Since it is highest in the wells nearest the river, the source must be up-river and the material must have seeped into bank storage.

Chromium, which could come from the refinery, is below allowable in all of the wells. This indicates no leak and no contamination.

Phenols are above allowable in 3 wells (1, 16, and ranch well). However, the quantity is comparable to the quantity in the City of Artesia's sewage effluent. As previously noted, the sewage effluent is used to irrigate the S $\frac{1}{2}$ NW $\frac{1}{4}$  Section 12 - just west of the ranch well and #16. Also the excess effluent is discharged into Eagle Draw just south of the sewer plant and ponds in the Draw northwest of well #1; up the hydraulic gradient from said well. In view of the very low phenols in the other observation wells adjacent to the ponds, the pond bottoms are not leaking and the 3 anomalies are due to sewage effluent percolating to the ground water.

The high chloride, sulfate, and total dissolved solids (TDS) in the water is the natural content of the aquifer water and is similar to the Pecos River water.

There is no evidence that the water in the evaporation ponds is contaminating the water in the aquifer. In view of the long time operation of these ponds, if they were contributing industrial pollutants to the aquifer the water being pumped regularly from the ranch well should show a poor analysis.

The water levels in observation wells 1, 3, and 5 indicate a flow to the river and to the south. The level is slightly above low flow water level in the river. Well #7 appears to have an anomalous water level some 7 feet above the low flow in the river and 4 feet above the wells to the south. This may be due to a perched water table in an old river meander.

The ponds have a surface area of 85 acres. Of this amount 70 acres has strong evaporation. The Soil Conservation Service has a map titled "Gross Annual Lake Evaporation, New Mexico" with contour lines denoting inches of evaporation. To convert these data to pond evapora-

tion data a factor of 1.21 is applied to the Lake Surface data. This factor is used because ponds are smaller and dry winds do not saturate in blowing across them as they do over large lake bodies. The contour for Artesia is 80+ inches per year. Using 80 times 1.21 less average rainfall at 12.8 inches per year (the last 5 years) gives a net evaporation rate of 84 inches per year. The average precipitation at Roswell for 1944-57 was 9.66 inches per year. The 7 feet of net evaporation per year from the 70 acres is a total of 490 acre feet per year. The refinery is discharging an average of 415,756 gallons per day or 466 acre-feet per year based on 39 measurements over 2 months. There is no loss in transmission when enough measurements are made to balance out the travel time between refinery and ponds. There is a slight gain when the fields along the route are being irrigated.

The calculated 100 year flood peak discharge of the Pecos River has been determined in connection with the Brantley Dam project and is 93,200 cubic feet per second (cfs). The flood at the site of the ponds would be 2 miles wide and have a crest of 14 feet above river bottom - 3313 feet above msl according to flood profiles by the US Corps of Engineers - chart #2. The flood profile shows a river bottom of 3299 feet; however, our measurements of low flow water level by registered surveyors is 3297 feet msl. The river bottom is a bit less. The bank of the river just north of the ponds is 90% covered by thick salt cedar growth. This growth will very materially lessen the flood's washing effect against the pond dikes. The peak elevation of 3311 or 3313 may cause water to flow into the ponds. The pond storage is equivalent to 80 seconds of peak flood flow.

Another testing series was undertaken along the flow ditch

alignment. Four wells north of the ditch and 3 wells south of the ditch were sampled. All wells are currently being used.

Boron in 3 wells exceeded the allowable. However, boron is not a product of the refinery. The 3 wells containing the boron lie along a line NW-SE parallel to the local tectonics. Apparently some extraneous source has concentrated boron along this fracture feature and has nothing to do with the refinery.

Phenols in 3 wells - 2 north and one south of the ditch - are above allowable. The well in 17-26-3-430 (north of the ditch) shows .001 ppm more than allowed. The well in 17-26-10-430 shows an excess of .007 ppm. This may be due to residual phenol from some old pipeline leak. The crude line to the refinery runs in the highway borrow pit. The well  $\frac{1}{2}$  mile west of the above shows a phenol content of less than .001 ppm. The well in 17-26-2-330 (City of Artesia's shallow well at the sewer plant) shows an excess phenol of .006 ppm, but only  $\frac{1}{2}$  of the amount of phenol in the sewage effluent. This well is only a short distance from Eagle Draw and the discharge point for excess sewage effluent. The aquifer is contaminated by percolating sewage effluent rather than ditch leakage.

Cyanide, which is a refinery waste product, is well below allowable in all wells which confirms no pollution from the refinery's ditch. Cyanide would give a quick and positive response if it were leaking. The sewage effluent is less than allowed but close to the limit.

The high chloride, sulfate, and total dissolved solids (TDS) in the well water samples is the typical shallow water aquifer in this area.

There is no evidence that refinery waste water is leaking from the transmission ditch and contaminating the ground water. Waste water



has flowed in this ditch for several decades. Had it been contaminating, the buildup would now be high.

In this study we are using the allowable limits of the various elements as set forth by the State Water Control Commission. for water with less than 10,000 ppm TDS concentration. We are dealing with an aquifer at the ponds wherein 60% of the observation wells have a TDS concentration greater than 10,000 ppm and 40% have a TDS concentration less than 10,000 ppm. Therefore, the aquifer water is mostly above the regulatory limit in TDS concentration. The wells showing less than 10,000 ppm TDS are effected by sewage effluent percolation.

Water Quality Control Commission regulations 3-101 C say:  
"The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations."

Respectfully submitted



Edward E. Kinney  
NM Reg. PE&LS #1144

August 10, 1981

## UNITED STATES GEOLOGICAL SURVEY (USGS) PECOS RIVER WATER QUALITY DATA

[illegible]

Table 1a

WATER ANALYSIS BY U.S. GEOLOGICAL SURVEY for water years 1979 & 1980\*  
 Sampled at Artesia Bridge on the Pecos River. Mg./L (ppm)

Date	Iron	Barium	Cadmium	Lead	Zinc
Oct 78	.01				
Nov	.02				
Dec	.03	.1	0	.005	.04
Jan 79	.04				
Feb	.01				
Mar	.05	0	0	.006	.04
Apr	.06				
May	.04				
Jun	.01	.6	0	0	.09
Jul	.02				
Aug	.06	0	.001	0	.01
Sep	.02				
Oct	.05				
Nov	.02				
Dec	.06	.4	0	.006	.004
Jan 80	.03				
Feb	.07				
Mar	.05	.2	.001	.001	.08
Apr	.11	.8	.001	.055	.15
May	.05				
Jun	.16	1.0	0	.057	.23
Jul	.05				
Aug	.05				
Sep	.84				

\*1980 water year data provisional until published



## PECOS RIVER \* Chloride Content at Artesia bridge

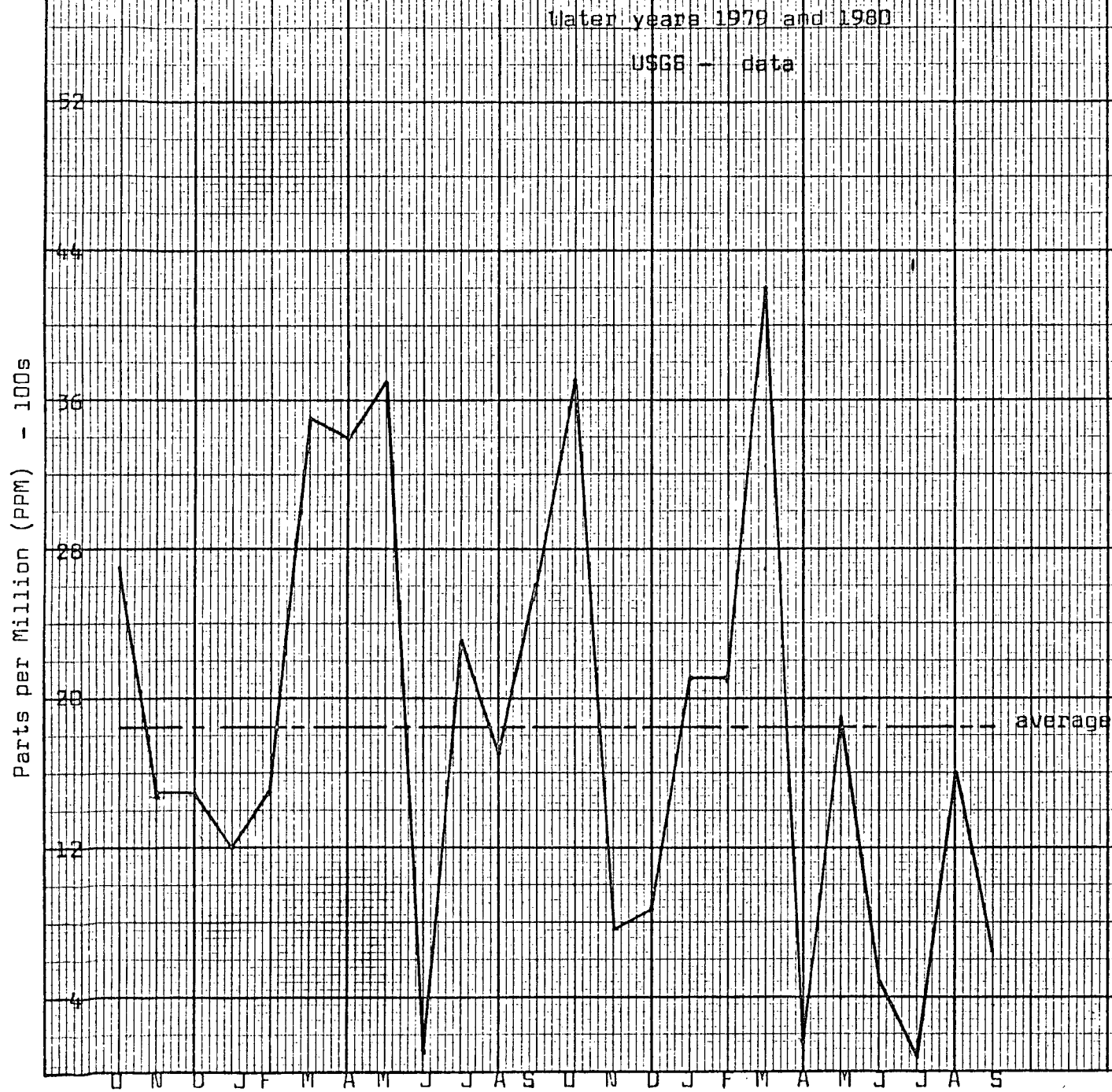


Table #2

NAVAJO REFINING COMPANY  
REPORT OF WATER ANALYSIS

Sampled 4/16/81 by Edward E. Kinney and N. Raymond Lamb

Type of Analysis	Well #1	Well #3	Well #5	Well #7	Well #9	Well #12	Well #13	Well #16	Well #17	W. Pond	Md Pond	E. Pond	Ranch Well	Type Analysis
Acidity	179	32	36	36	36	55	11	13	17	13	29	10	13	Acidity
Alka. "P" as CaCO <sub>3</sub>	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Alka. "P"
Barium	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	0.2	< 0.1	< 0.1	< 0.1	Barium
BOD	44	40	24	38	36	38	22	44	42	116	116	72	38	BOD
Cadmium	0.05	0.009	0.05	0.04	0.01	0.07	0.002	0.002	0.03	0.003	0.002	0.002	0.002	Cadmium
COO	145	73	176	136	88	256	48	152	88	102	116	225	88	COO
Chloride	8313	2652	7089	3570	2703	8058	357	1173	4692	918	1468	1632	1632	Chloride
Chromium	0.002	< 0.001	0.002	0.002	0.002	0.002	0.002	< 0.001	0.002	0.04	0.1	0.1	0.002	Chromium
Chromium 6+	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Chromium 6+
Copper	0.001	< 0.001	0.001	0.004	0.006	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	0.004	Copper
Flouride	0.9	1.6	0.44	0.3	0.7	0.9	1.2	0.44	0.3	6.6	7.4	5.8	0.25	Flouride
Hardness (CaCO <sub>3</sub> )	5760	2760	4660	3160	3120	8920	1570	1610	4470	760	1060	1160	2400	Hardness
Iron	0.05	0.01	0.04	0.05	0.01	0.04	0.02	< 0.01	0.03	0.06	0.06	0.1	0.06	Iron
Lead	0.006	< 0.001	0.007	0.001	0.001	0.007	0.003	0.002	0.005	0.002	< 0.001	< 0.001	0.005	Lead
Magnesium	850	250	650	370	370	1330	79	140	470	60	96	110	310	Magnesium
Nickel	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	Nickel
pH Units	7.8	7.4	7.7	8.0	7.7	7.6	7.4	7.7	7.7	7.7	7.4	7.2	7.8	pH
Phenols	0.015	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.016	< 0.001	0.04	0.027	< 0.001	0.022	Phenols
Alka. "M"	700	356	506	596	322	545	146	425	198	173	349	214	205	Alka. "M"
Solids, Total Dis.	19,700	7,730	16,800	14,200	10,400	28,900	3,200	4,770	11,200	2,930	4,020	4,920	6,860	Solids
Sulfate	4,920	2,720	4,290	5,600	4,160	11,500	1,810	1,890	2,930	885	1,050	1,520	2,830	Sulfate
Sulfide	0.21	0.10	0.13	0.05	0.03	0.05	0.04	0.10	0.03	25.1	13.4	0.36	0.03	Sulfide
Zinc	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1	0.2	

Analysis made by: Controls for Environmental Pollution, Inc., Box 5351, Santa Fe, New Mexico 87501

BOD<sub>5</sub> analysis - 5 day incubation

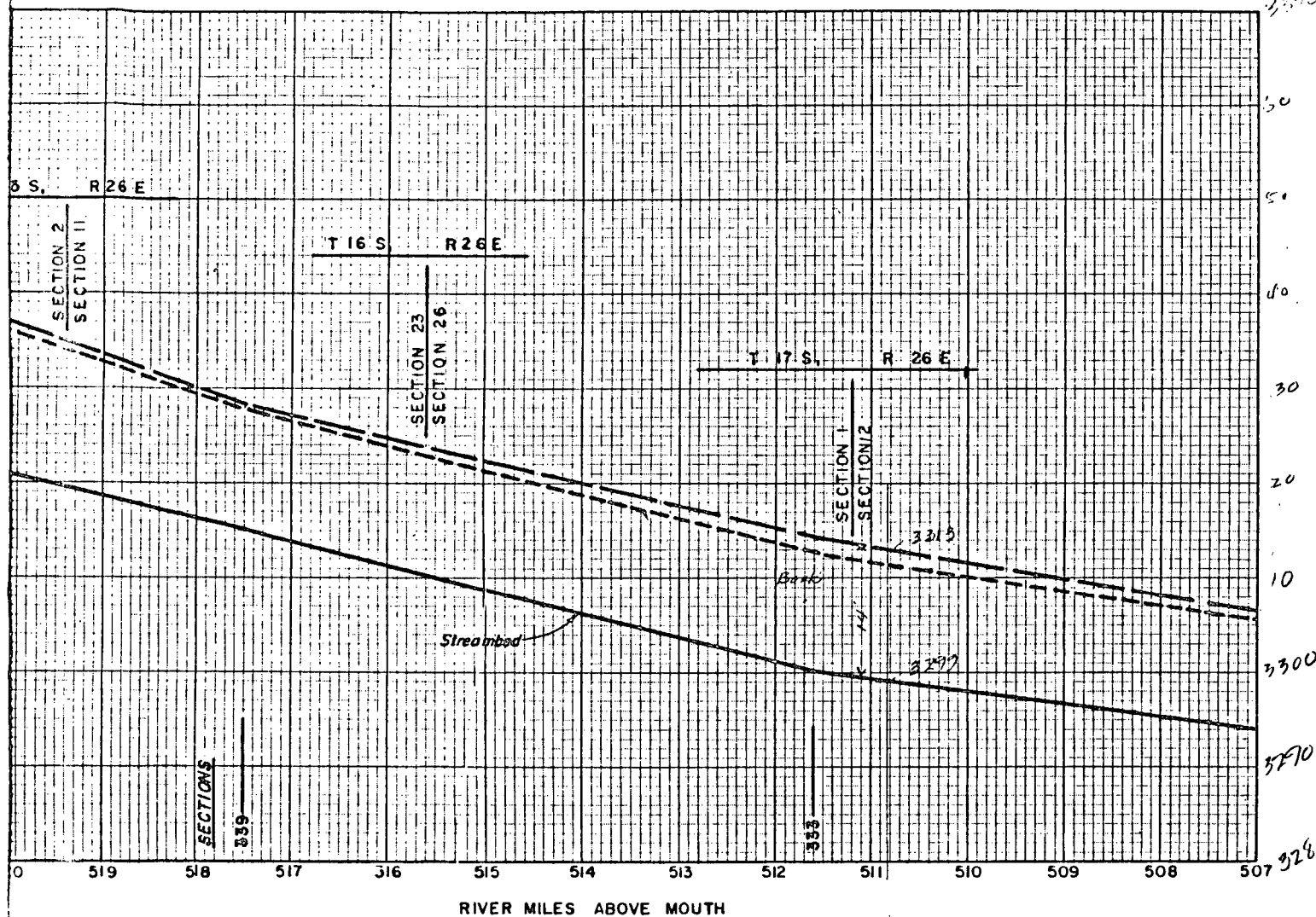
pH : electrode

All measurements mg/liter (ppm)

Chart #2

**LEGEND**

STANDARD  
PROJECT FLOOD ————  
INTERMEDIATE  
REGIONAL FLOOD - - - - -



DEPARTMENT OF THE ARMY  
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS  
ALBUQUERQUE, NEW MEXICO.

**FLOOD PROFILES**

PECOS RIVER  
VICINITY OF ARTESIA, NEW MEXICO  
EDDY COUNTY

## NAVAJO REFINING COMPANY

## WATER ANALYSIS

Element	Standard	17-26-2-330	17-26-3-330	17-26-3-430	17-26-10-230	17-26-10-330	17-26-10-430	17-26-11-310
Aluminum	5.0 ppm	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Arsenic	0.1 "	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Barium	1.0 "	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	0.75 "	0.5	0.8	0.6	0.9	0.4	0.2	1.0
Cadmium	0.01 "	< 0.001	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Chloride	250 "	202	200	808	600	200	51	300
Chromium	0.05 "	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cobalt	0.05 "	0.01	< 0.01	0.01	0.02	< 0.01	0.02	0.02
Copper	1.0 "	0.003	0.02	< 0.001	0.01	< 0.01	< 0.001	0.001
Cyanide	0.2 "	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoride	1.6 "	1.2	0.15	0.74	0.14	0.50	0.86	0.84
Iron	1.0 "	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Lead	0.05 "	< 0.001	0.02	0.003	0.004	0.001	< 0.001	0.002
Manganese	0.2 "	0.004	< 0.001	0.002	0.005	< 0.001	0.02	0.005
Mercury	0.002 "	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Molybdenum	1.0 "	0.002	0.006	0.001	0.003	0.001	0.001	0.001
Nickel	0.2 "	0.01	< 0.01	0.04	< 0.01	0.02	< 0.01	0.04
Nitrate	10 "	3.7	3	5.4	5	4	< 0.1	6.4
ph	6-9	7.6	8.1	7.4	8.1	8.2	7.8	7.4
Phenols	0.005 "	0.011	< 0.001	0.006	< 0.001	< 0.001	0.012	< 0.001
Selenium	0.05 "	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.02
Silver	0.05 "	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TDS	1000 "	1700	2740	3500	3380	1520	884	4320
Radium 226)	30 pCi/	< 0.6	< 0.6	< 0.6	0.7	< 0.6	0.7	< 0.6
Radium 228)	liter	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Uranium	5.0 ppm	0.012	0.008	0.012	0.006	< 0.005	< 0.005	0.040
Sulfate	600 "	297	587	227	1840	216	534	2380
Zinc	10 "	0.4	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1

# NAVAJO REFINING COMPANY

## WATER SAMPLES

Element	Standard	City water	Sewage Eff	Refin. Disc.	Pond inlet
Aluminium	5.0 ppm	<0.1	<0.1	<0.1	<0.1
Arsenic	0.1 "	<0.01	<0.01	0.08	0.4
Barium	1.0 "	<0.1	<0.1	<0.1	<0.1
Boron	0.75 "	0.3	0.5	0.5	0.3
Cadmium	0.01 "	0.003	<0.001	0.003	<0.001
Chloride	250 "	20	202	4545	960
Chromium	0.05 "	<0.001	0.003	1.4	1.4
Cobalt	0.05 "	<0.01	0.01	0.61	0.07
Copper	1.0 "	0.01	0.002	<0.001	0.002
Flouride	1.6 "	0.27	1.3	15	100
Iron	1.0 "	0.03	0.02	3.8	5.2
Lead	0.05 "	0.02	<0.001	0.005	<0.001
Manganese	0.2 "	0.004	0.006	0.06	0.08
Mercury	0.002 "	<0.004	<0.004	<0.004	<0.004
Molybdenum	1.0 "	0.006	0.001	<0.001	<0.001
Nickel	0.2 "	<0.01	<0.01	0.09	<0.01
Nitrate	10 "	0.6	<0.1	0.4	1.4
ph	6-9	8.1	7.2	3.5	3.2
Phenols	0.005 "	<0.001	0.02	5.3	9.9
Selenium	0.05 "	<0.01	<0.01	0.05	0.02
Silver	0.05 "	<0.01	<0.01	<0.01	<0.01
TDS	1000 "	880	1220	8690	2690
Sulfate	600 "	442	444	1140	802
Zinc	10 "	0.5	<0.1	0.4	0.5
Radium 226)	30 pCi/	1.1	2.4	1.8	5.2
Radium 228)	liter	<1	<1	<1	<1
Uranium	5 "	<0.005	0.005	<0.005	<0.005
Cyanide	0.2 "	<0.1	0.16	22	13.8



A.J. LOSEE  
JOEL M. CARSON  
CHAD DICKERSON  
DAVID R. VANDIVER

LAW OFFICES  
LOSEE, CARSON & DICKERSON  
300 AMERICAN HOME BUILDING  
P. O. DRAWER 239  
ARTESIA, NEW MEXICO 88210



AREA CODE 505  
746-3508

12 December 1980

Mr. Dick Stamets  
New Mexico Oil Conservation Division  
Energy and Minerals Department  
P. O. Box 2088  
Santa Fe, New Mexico 87501

*Met with  
Navajo Reps  
1-29-81 in Artesia  
Discussed what should  
be done (mon. for wells - Engr  
report) Work to  
begin  
extension to be  
requested*

Re: Correspondence from Thomas A. Parkhill

Dear Mr. Stamets:

Navajo Refining Company has received a letter from Mr. Thomas Parkhill concerning Navajo's waste water disposal system. You are acquainted with the Navajo ponds and their location. The ponds are recognized by the EIA and the EPA as being attached to the refinery and a part thereof.

Navajo had not intended that its submittal to the department be considered as a request for approval of a discharge plan, but rather that it be considered as proof that Navajo was not required to file an application for a discharge plan. I had thought that the department understood this. Navajo contends that the waste water from the refinery does not contaminate any fresh water source and, therefore, is not subject to any filing requirements. Apparently, Mr. Parkhill misunderstood this assertion. We want to correct that misunderstanding.

Mr. Parkhill in the third paragraph of his letter states that the waste water does not comply with Water Quality Control Commission standards. My understanding of the nature of the inquiry was that the OCD was not interested in whether the water standing in the ponds would make good drinking water but rather whether Navajo was causing a significant degradation of any potable ground water source. We contend that the data submitted shows (1) that the ground water in the vicinity of the Navajo ponds is not potable at best; (2) that if the ground water is rendered less fit by any outside source, that source is not Navajo.

Mr. Dick Stamets  
12 December 1980  
-2-

In connection with the Parkhill letter, we know from the letter the conclusions he reached, but we do not know the reasoning or methodology which he used in reaching these conclusions. We would appreciate it if you could furnish Navajo's own environmental specialists with this information so that they may review Mr. Parkhill's work. The information which we submitted the department according to our own analysis furnishes no proof that Navajo is degrading fresh water sources. Indeed in some cases the data from the wells shows less dissolved solids today than when Navajo started sampling some years ago.

Navajo wants to cooperate with the department, as we believe is demonstrated by its history, but we are at a loss as to where to proceed from this point. If we could be furnished with the data which supports Mr. Parkhill's conclusions, we will be glad to have the data evaluated and then meet with you and try to work out a satisfactory solution. We are concerned that some of the suggested changes would cause Navajo to be in violation of laws which we are not presently violating. For example, as you know, Navajo is of the opinion that the soil flocculation process which has occurred at the ponds and the ditch has made them virtually impermeable. We would be reluctant to abandon these ditches and the pond without having some better alternative solution. As always, we appreciate your cooperation. We would like, at your convenience to meet with you in order to reach a resolution of our differences of opinion.

Very truly yours,

LOSEE, CARSON & DICKERSON, P.A.



Joel M. Carson

JMC:paf

cc: Mr. Jack P. Reid  
Mr. Donald E. Lewis  
Mr. Wink Chamberlain



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

December 3, 1980

Mr. David G. Griffin  
Environmental Coordinator  
Navajo Refining Company  
P. O. Drawer 159  
Artesia, New Mexico 88210

Re: Navajo Refinery Waste  
Water Discharge Plan

Dear Mr. Griffin:

The Oil Conservation Division (OCD) has received and reviewed your reply for a discharge plan.

The plan cannot be considered complete because it does not comply with all the requirements defined in the Water Quality Control Commission Regulations (W.Q.C.C.).

The information Navajo Refinery Company submitted does not indicate that a total retention waste water system is in operation at your refinery. In addition, water analyses submitted by your company indicate the waste water does not comply with W.Q.C.C. standards.

The areas where Navajo Refinery Company may improve their waste water treatment system are:

- A. A better method must be used to remove and recover oil from waste water.
- B. The ditch may be replaced with a lined channel with waste water leak detection devices or a pipeline.
- C. The present lagoons should be replaced with properly lined lagoons with monitoring devices to detect for waste water leaks.

Page 2  
Letter to David G. Griffin  
December 3, 1980

- D. Dikes around lagoons should be of a sufficient height and thickness to resist a maximum flood on record.
- E. The discharge plan should include spill prevention control plan.

Navajo Refinery Company should look into the possibility of segregating the cooling tower and boiler blowdown water from the process water. Depending on the quality, some of this water may possibly be discharged with no further treatment. The refinery industry routinely uses this separation technique.

The OCD must request a modification of your discharge plan to comply with W.Q.C.C. regulations. The modified discharge plan must be submitted to the OCD by February 2, 1981.

The OCD will not allow you to continue to discharge effluent if an acceptable discharge plan is not received by the above date.

If you have any questions, please contact me at the above address or call me at 827-2534.

Yours very truly,

*Thomas A. Parkhill*

THOMAS A. PARKHILL  
Hydrogeologist

TAP/fd

cc: O.C.D., Artesia

TELEPHONE  
A. C. (505) 746-9881



# REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

TELETYPE  
910-986-0990

ARTESIA, NEW MEXICO - 88210

October 15, 1980

OK JAR

Mr. Joe D. Ramey, Director  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

RE: Navajo Ponds Progress Report

In reply to your letter of October 1, 1980 to Joel Carson, Navajo submits this progress report concerning your request of April 29, 1980 for a discharge plan.

Navajo fully expects to respond to this request by the extended due date of November 24, 1980. All the data from past studies that Navajo has done on its solar evaporation ponds has been located. Further tests and the gathering of geological data is due to be completed by no later than mid-November.

Some of this same information is being compiled for the EPA under its resource Conservation and Recovery Act regulations going into effect on November 19, 1980. Since the required report to EPA requests much of the same information that will be used in our response to your request for a discharge plan, we expect to report both to the OCD and the EPA by November 19, 1980.

Yours truly,

David G. Griffin  
Environmental Coordinator

DGG:ah  
cc: Joel Carson



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

October 1, 1980

Mr. Joel Carson  
Losee, Carson & Dickerson  
Attorneys at Law  
P. O. Drawer 239  
Artesia, New Mexico 88210

Re: Time Extension for Navajo  
Refinery Waste Water  
Discharge Plan

Dear Mr. Carson:

We have received your letter of September 25, 1980, concerning your request for an extension of 90 days from August 25, 1980.

The information Navajo submitted shows good cause why the Oil Conservation Division should grant a time extension. The due date is hereby extended to November 24, 1980, with the provision that Navajo submit a discharge plan progress report to the Division on October 15, 1980.

Please let us know if you have any problems with this arrangement.

Yours very truly,

JOE D. RAMEY  
Director

JDR/TP/fd

cc: Mr. David Griffin  
Environmental Coordinator  
Navajo Refining Company  
Artesia, New Mexico  
O.C.D., Artesia

LAW OFFICES

LOSEE, CARSON & DICKERSON, P. A.

300 AMERICAN HOME BUILDING

P. O. DRAWER 239

ARTESIA, NEW MEXICO 88210

AREA CODE 505

746-3508

A. J. LOSEE  
JOEL M. CARSON  
CHAD DICKERSON  
DAVID R. VANDIVER

25 September 1980



Mr. Joe D. Ramey, Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Navajo Refining Ponds

Dear Mr. Ramey:

The fault for not filing an application for an extension of time for filing a discharge plan is mine. I had visited about the matter with Dick Stamets and had explained to him that Navajo had been monitoring the ground water around the ponds for some time but that we had not been able to find the data and correlate it for a meaningful presentation because the engineer in this project had quit Navajo and had gone to Wyoming.

Dick recommended that we apply for an extension but I had not had time to do so since I got home. I would appreciate it if you would treat this letter as an explanation of the reasons for Navajo's failure to file and as a request for an extension of time within which to make the required filing or demonstrate to the Division why no filing is required. We request that an extension of 90 days from August 25 be approved.

Respectfully submitted,

LOSEE, CARSON & DICKERSON, P.A.

  
Joel M. Carson

JMC:bjm

cc: Mr. David Griffin  
Oil Conservation Division, Artesia Office



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

September 22, 1980

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Mr. David G. Griffin  
Environmental Coordinator  
Navajo Refining Company  
Drawer 159  
Artesia, New Mexico 88210

Dear Mr. Griffin:

On April 29, 1980, the Oil Conservation Division requested a discharge plan for Navajo's Artesia Refinery. Under the provisions of the Water Quality Control Commission regulations, Section 3-106A, requires submittal of the discharge plan within 120 days of receipt of notice unless an extension of this time period is sought and approved. The last day of this period was August 25, 1980.

The failure to file a discharge plan is a serious matter. The OCD has the power to issue an order which states that Navajo's Artesia Refinery cannot make any further discharges without an approved discharge plan.

If you have any questions, please contact me or Thomas Parkhill at the above address and telephone number.

Yours very truly,

JOE D. RAMEY  
Director

JDR/TP/fd

cc: OCD Artesia District Office



# Stock, Wildlife Endangered by Oil Pits, Spills

Continued from A-1

fields," says a 1979 U.S. Soil Conservation Service bulletin.

Oil can deprive crops of water, the report says. Soil microbes decompose the oil use up oxygen in the process. "If more oxygen cannot enter the soil, the iron and manganese (present) become more soluble, and thus, toxic," the report says. "The two main problems caused by oil are the tie-up of nutrients and the toxicity to plants."

Where brines associated with oil production have leaked from pits or where pipes have leaked, the vegetation is scorched, as if by a brush fire.

Driving through the pastures and fields of Loco Hills and Maljamar in southern New Mexico, these scorched patches are evident. So are the oil spills from overflowing pits.

Spills are supposed to be reported to the Oil Conservation Division, which may levy a \$1,000 fine for failure to report them. But it is not a violation to spill.

Becky Jo Doom said an oil company representative 10 years ago cut a dike to let a full oil pit run onto pasture. Then her husband sued, the judge ruled in favor of the oil company, she said.

Today, oil companies are aware of the ranchers' plight and most try to cooperate, according to Joe Ramey of the OCD. But OCD has encountered hostility between rancher and company that warrants intervention, despite the OCD's lack of authority to do so.

The Oil Conservation Division's duties are, first, to prevent the waste of oil, second, to protect the rights of oil companies, and third, protect fresh water sources from oil pollution.

Protection of ranchers' rights, though not spelled out, could conceivably fall in the third category, Ramey said.

But the ranchers, frustrated by problems with some of the companies, often charge that the OCD is on the oil operators' side.

"They think we need the oil worse than we need the land," said Gary Caviness, whose ranch near Maljamar has about 300 oil wells on it. "I guess we need the oil, but I don't think we need to tear up the whole country trying to get it."

Caviness said the sides of one former waste pit on his land were leveled by a Texas company.

"Now, when it rains, it'll wash salt and all that junk out on the grass. They paid us damages, but what I'm getting at is that once they pour that salt water out, that land is ruined. I think (OCD) ought to make these oil companies bring soil in."

Caviness has also had pipeline breaks on his land. "It's just like pouring oil out there on the grass. Eventually it'll kill it."

He also said he loses three or four cattle a year to bobbing pump jacks and oil pits. Cattle get under the pump jacks in summer "to keep the flies away. Then when that weight comes around, if they happen to be between there and the block, it'll mash 'em to death."

When a cow dies from drinking pit wastes, there's no way to distinguish which operator is at fault, he added.

"There are so many different companies down here. You go asking one and they say it must not have been ours, and it was this other company. You just get a damn run-around about it. You can

spend \$30 on phone calls (to OCD and lawyers) and not get anything done."

He also claimed operators let their holding tanks overflow. Those who come out to the tanks to empty them into trucks are independents, hired to check on the tanks, he said. "All they know to do is come by and check, and if that dang thing's pumping and there isn't any oil out (in the pit), well, everything's all right; it's a race back to the coffee shop."

"You see, the owner of that pump lives in Houston. Why, he probably doesn't even know this well's here. All he looks for every month is the money."

Some of the larger companies and independents that work closer to home seem to operate with more care. A spokesman for one large New Mexico independent said, "I think we're a fairly responsible operator. Oil is worth \$1 a gallon and we don't like to see it wasted."

Another independent, Tim Collier of Artesia, said if a tank overflows, "Someone's not doing their job. Sure you have some spills, but any spill over 10 barrels (420 gallons) has to be reported immediately. You have to pay royalties on any spills, and taxes."

Both said the oil companies pay ranchers for lost cattle and spills. The spokesman for the large independent said, "We have each and every pit fenced because if a cow gets in there and dies, we pay." The cattle could "also damage the equipment," he said.

An employee on the vast Turkey Track Ranch near Maljamar said he has seen 30 calves killed by pump jacks in 13 years. The Turkey Track has 3,000 to 5,000 wells on it, he said. But with some companies, he added, "even if they pay (for losses), you lose," because the rancher is paid by the weight of the animal at death, not by the weight he might have been at selling time.

"We encourage the companies to utilize as little of the land as possible and to honor the requests of ranchers if at all possible," OCD chief Ramey said. Up in the Farmington area, Ramey said OCD had numerous complaints about "one company in particular, whom I won't mention, but this company was evidently running roughshod over ranchers."

OCD wrote to the company and told it to stop staking claims until a meeting could be held to discuss the best locations. "They threatened to take us to court, saying it was out of our jurisdiction, and we said fine."

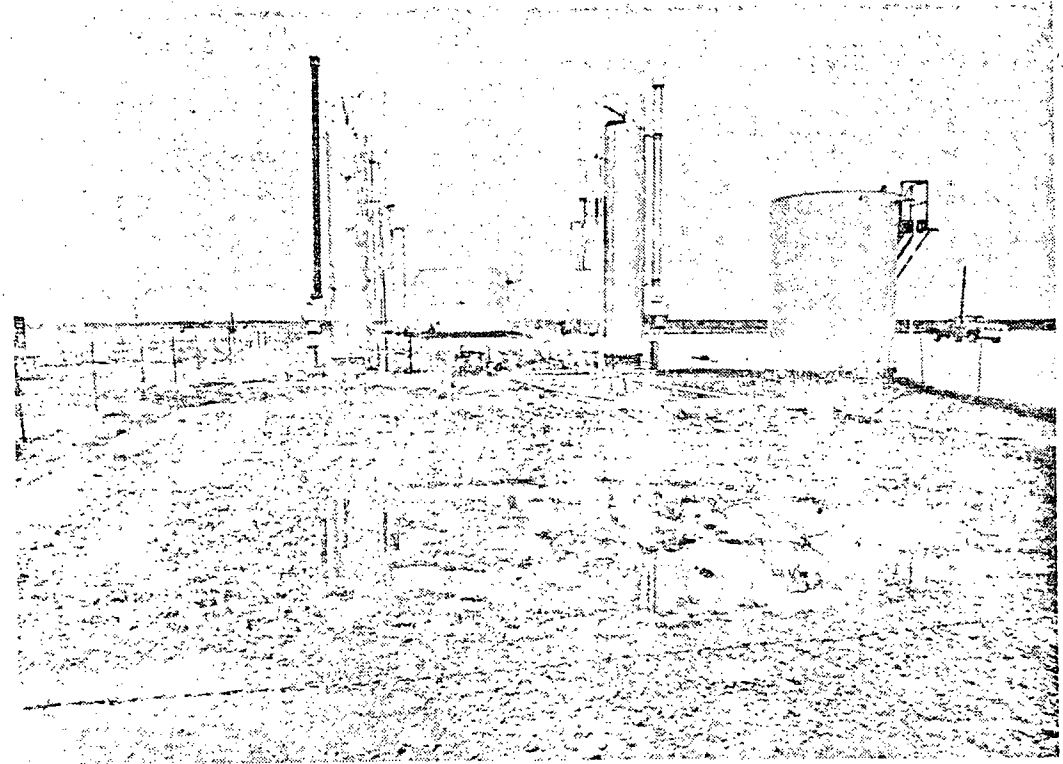
Meanwhile, OCD refused to approve any more stake locations. "If we find any operator in violation of our rules, it's my policy that they be fined," Ramey said.

While there is no law against spills or requirement for cooperation, "We do have a little catch-all phrase in our rules that says you can't damage surrounding properties," Ramey said.

But Ramey said, "Some of the ranchers are completely unreasonable about their demands. It's somebody on fee land and he's getting a royalty for the oil, why he can tolerate a hell of a lot more than somebody who's got a ranch on state land and no royalty."

Still, Ramey is aware of the problems ranchers face, and said he plans to ask the Legislature for a representative in Artesia just to deal with pollution.

"We're getting more and more complaints about illegal dumping of sediment oil and salt water — in cal



Journal Photo by Denise Tessler

Oil Pit Near Loco Hills, N.M., Contains Tank Bottom Sludge; Rainwater and Shiny Surfaces Can Attract Birds To the Pits

iche pits, on ranchers' pastures, in ditches. It's easy for an old boy — come 6 o'clock with a load he's supposed to take to the disposal site — to open the valves and drive home. He avoids driving 20 miles to the disposal site and kills the grass as he drives home."

In the town of Eunice, N.M., is a pit abandoned by General Petroleum Co., about five feet deep and 10 feet long. "It's just brim-full of oil," Ramey said.

"We authorized the pit in the first place 20 years ago or more. That was at a time when they treated all (the waste oil) they could and put the rest in a pit. There don't seem to be any laws as yet (to cover it)."

"I don't think you could put another barrel in there without it running over. I don't know what can ever be done with it. It's too big to burn. It's too close to houses to burn."

Burning of pit oil is a misdemeanor offense under the Clean Air Act.

The Eunice pit is exceptionally large and unusual. Three large ponds, only one of which is tar-like and oily, exist at Navajo Refining Co. in Artesia, also the legacy of past practices.

But little pits, about 10 feet by 10 feet, exist near almost every well in the state. The OCD estimates there are 16,000 of these pits, some of many of which contain oil sludges and brine.

The pits, especially when filled with rainwater or shining under the light of a full moon, attract birds, including migratory waterfowl and endangered species.

According to wildlife specialists, a bird that comes in contact with pit

sludge rarely survives the losses are greatest during spring and fall — migrating season.

"Fall migration is in full swing," said Lee Grover, a wildlife biologist with the Bureau of Land Management in Carlsbad.

Grover has made birds and oil pits his specialty, and spends as much time as he can out in the field documenting bird deaths.

"While the study isn't finished, preliminary estimates say that about 36,000 birds are lost annually down here," Grover said. Grover said he estimated the deaths based on kills he has personally seen, information from the U.S. Fish and Wildlife Service and from Midge Erskine, an Odessa, Texas, woman who has made bird rehabilitation her specialty. Grover said there are between 2,000 and 10,000 pits in his area. "I used the 2,000 figure."

"We think the loss is significant," said Gust J. Nun, special agent in charge of enforcement for the U.S. Fish and Wildlife Service, which is especially interested in endangered species.

"One of our problems (in determining losses) is the birds sink under the surface," Nun said. "If you're not right there, you never know how many (birds) are in there. One problem, too, is identification after they get all covered with oil."

According to Mrs. Erskine, brine water "literally eats feathers." An oil-soaked bird is "a big, black glob and the only way you know it's a bird is because of the eyes." Birds retrieved from large salt lakes, which are more common in Texas, "look like an ice sculpture. They die within an hour or two."

Mrs. Erskine estimates that 100,000 birds are lost each year in West Texas, where "playa lakes," or natural wind-swept land depressions, are used as convenient dumping grounds. "Ducks Unlimited spends millions in Canada to raise these babies. They come down to Texas and are killed in our lakes and ponds," she said.

Mrs. Erskine got interested in birds and oil pits when she saw a whooping crane at a Texas oil lake. "It was flying with some sandhill cranes."

Tom Smylie of Albuquerque's Fish and Wildlife Service office said he has retrieved golden eagles from pits around Farmington. Mark Rosacker, animal curator at Living Desert State Park near Carlsbad last year saved a bald eagle that had been oiled in a pit and an oil-soaked snow goose. A blue heron brought to Rosacker, however, did not survive.

Rosacker said he sees three or four birds a year. "Most are water birds of one type or another. But when you have a bird in trouble, like a blue heron, it may attract a bird of prey, like an eagle, which gets stuck himself."

Rosacker, Nun and the BLM have all suggested that pits be covered with netting to keep birds out.

But the oil companies say this is too expensive, and that the problem is overstated.

Ramey said he hadn't heard of a bird problem.

Collier said birds have been found in his pits, but it cannot be helped because the EPA won't allow burning. One of the large independents, contacted by the Fish and Wildlife Service, put flags around pits where ducks

were found to chase others away.

But netting, the spokesman said, would be hard to maintain, because sour crude (so-called because of the oil's sulfur content) would corrode the netting, requiring routine replacement.

The spokesman added that he did not see a threat to waterfowl. "Ducks have to taxi in to these pits (to land) and our pits just aren't that big."

Under the Migratory Bird Treaty, a company can be fined \$1,000 per bird for pit kills. Nun said no citations have been issued, but the Fish and Wildlife Service urges companies to clean up dirty pits.

Under state law, it is unlawful to trap with the purpose of killing waterfowl, but Scott Brown of the Game and Fish Department said citations are unlikely because a violation occurs only when a company intends to kill birds.

The newer companies, including Yates Petroleum of Artesia, are making efforts to eliminate these pits. By storing wastes in fiberglass tanks, a company eliminates both the attraction for birds and the possibility of underground fresh water contamination through seepage.

For two years, the BLM has advocated use of tanks instead of pits to protect these tanks is high, the BLM noted.

But the report added, "The importance of (pit elimination) should not be underestimated." In addition to fewer bird deaths, the report said, the tanks protect the Ogallala aquifer. "Over a million people in West Texas and eastern New Mexico derive their water, including drinking water, from this source."

NEXT: Settling ponds and their effects on livestock and wildlife.

## 4 Caught Exiting U.S. With Unreported Cash

## GIs Find Mexican Food, Dust on Egypt Exercise

# Death May Await Wildfowl in Artesia's Pungent 'Rio Negro'

Continued from A-1

murky waterhole, filled with trees.

The wildlife agency is concerned because high in those trees nest the snowy white cattle egret, black-crowned night herons and ring-billed sea gulls. And the ponds lie in the fly-way of many species.

A bird that lights on an oily tar pit rarely flies again, according to Charlie Sanchez of the U.S. Fish and Wildlife Service.

Sanchez, who worked extensively on the wildlife effects of the Ixtoc oil spill in the Gulf of Mexico, said, "I consider this Navajo thing just as important (as Ixtoc)."

Fifty miles from Navajo's settling ponds, at the Bitter Lakes Wildlife Refuge near Roswell, he explained, there are "concentrations of upwards of 70,000 waterfowl species during the winter. During the day, they will move back and forth, up and down the Pecos River Valley in search of food, feeding in the fields. This is a period when they may come in contact with this oil."

Birds cannot smell. "They see the water (in the ponds), it's shiny and they eventually light. That's it. No way they can get out of it. There's no telling how many (birds) may have been killed over a period of time," Sanchez said.

When Sanchez visited the ponds, he saw a rookery of black-crowned night herons and snowy egrets. Two of the egrets had oil on their breast feathers, he said.

Birds protect their eggs with their breasts. "Based on research that has been done by our production wildlife research center, small amounts of oil hydrocarbon will have fatal effects on the nesting success of these migratory birds," Sanchez said.

Navajo Refining Co. did not start the problem. It inherited the ditch and settling pond system from Conoco Inc. 11 years ago.

Now that wildlife deaths have become an issue and EPA is concerned about Pecos overflows, Navajo says it is attempting to clean up the ditch water before it gets to the ponds.

"We're good citizens," said Navajo Vice President William Gray. "We recognize the fact we have a lot of problems. In time, we'll correct (the situation)."

The state agency that governs the oil and gas industry, the Oil Conservation Division, decided this summer to require 15 of the state's 52 refineries and gasoline plants to report on their discharges. Navajo was the first to be asked. But Gray said Navajo will not write a report because it does not discharge into the Pecos, only the ponds. The ponds are on private land.

Navajo produces gasoline, diesel, asphalt, butane, propane, fuel oil and commercial and military jet fuels from crude oil brought in by truck and pipeline.

The wastes from these processes flow at 500 gallons a minute down the ditch, which is marked at roadsides to keep people out of it.

Gray said the ditch water is "more than 99.9 percent water with a trace of sulfide and fluoride" and "less than 300 parts per million of oil."

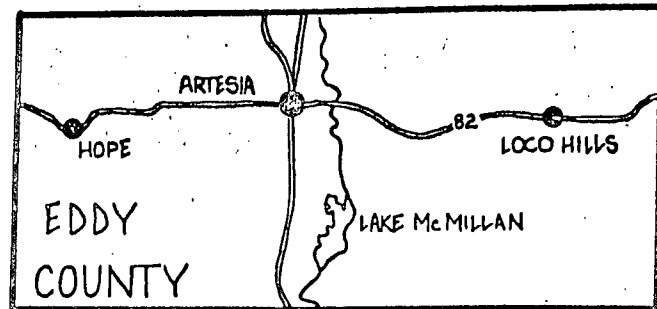
But he acknowledged that there is a "high concentration of total dissolved solids." The black is "probably oil, mixed with other solids" as the water evaporates.

Newer refineries dump their wastes deep down injection wells. But the Navajo system exists, Gray said, because "It was the cheapest and the best way to go 40 years ago."

"As far as we know, there's no law we're breaking," Gray added. "What does it hurt besides smell bad? I understand we had some cranes nesting down there (at the ponds) and they're doing great."

Gray also said Navajo checked the Pecos River upstream and downstream from its point near the ponds and "there's no difference in the (river) water." Navajo has also drilled wells along the river to see if the ponds are leaking wastes underground, he said, with no results.

On Feb. 24, 1979, members of the Audubon Society and the Fish and Wildlife Service went to Navajo's ponds and found about a dozen oil-coated birds, according to a U.S. Bu-



reau of Land Management report. "A whooping crane (an endangered species) was sighted in a flock of more than 200 sandhill cranes using the area," the report said.

November is the height of waterfowl season, and Charlie Sanchez said the Fish and Wildlife Service will survey many of the thousands of oil pits in southeastern New Mexico to assess bird deaths.

Near almost every tank battery, or crude oil holding tank at pump sites, is a pit to capture spills. Like Navajo's ponds, but on a smaller, more numerous scale, these pits attract birds with shiny surfaces and rob their ability to fly. "We consider this a regional problem," Sanchez said.

Tim Collier, who bought a farm near the ditch and sells crude oil to Navajo, has a different perspective.

"It's not beautiful, it smells a little nauseous, but it's certainly not a detriment," he said. In fact, Collier said he would like to know if the ditch water could be used to irrigate crops. He chose to grow pecan trees, 23,000 of them, because they will grow in a saline environment.

Navajo isn't trying to clean up the settling ponds. Gray said the ponds will eventually evaporate.

It is trying to recycle water and clean it up before it enters the ditch, but the ditch will be around for several more years.

Navajo is spending \$25 million on a fluid catalytic cracker, which cracks asphalt-like residual rocks to produce six to eight million gallons of gasoline

and diesel fuel.

That device will operate in two or three months, Gray said, and has employed almost 200 people during construction. "If we don't make more products, we won't have the money to clean up (the wastes)," Gray said.

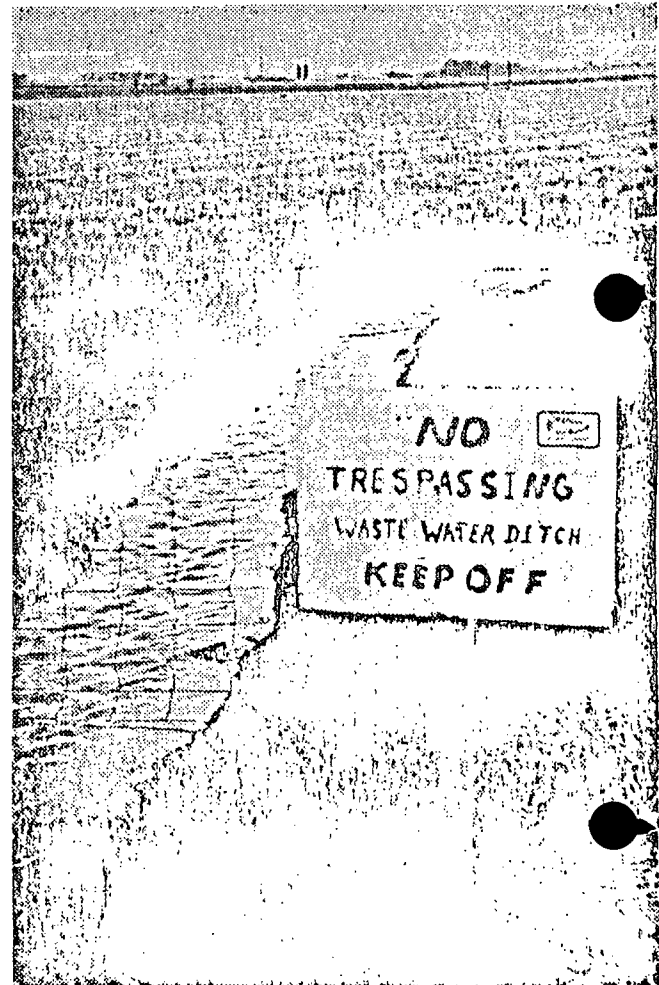
Gray added that Navajo has already spent \$50,000 on an injection well that didn't work out geologically. And even though the company has purchased a second oil skimmer to keep the ditch water as clean as possible, "There's no way we're going to get 100 percent of this," Gray said. "It's impossible. The refinery itself is an old refinery."

In 1976, the state Water Quality Control Commission listed Navajo's three ponds as the "Best Practicable Technology Available."

Since then, the Environmental Improvement Division issued a report on waste pits throughout the state that said, "The (Navajo) wastewater lagoons are located very close to the Pecos River... and there is a history of spills and breaches, which sometimes flow into the river. However, the contamination of shallow groundwater remains to be conclusively documented."

Alarmed at this report and by information that substantial numbers of waterfowl had been dying in the Navajo ponds, the U.S. EPA asked Navajo in May for a full report within 10 days. "These conditions are subject to civil and/or criminal sanctions under the Clean Water Act," the agency said.

Navajo replied that while about 100 to 300 birds were seen living near the ponds, "No significant number of wat-



Journal Photo by Denise Tessier

## Sign by Roadside in Artesia Warns Against Refinery's Wastewater

erfowl were found dead, dying or sick."

"I'm not saying we haven't seen dead birds," Gray told the Journal.

Navajo also said it had put a stop to overflows in the ditch by repairing ditch walls. The company also told EPA about its new oil skimmer. "This skimmer is located inside the main

refinery boundaries in order to catch oil before it travels down the ditch to the solar evaporation ponds," Navajo wrote EPA.

EPA hasn't investigated further but is satisfied with Navajo's response. "We feel the matter's been well taken care of and there's no need for further action," said EPA spokesman Roger Mechem in Dallas.

# Death May Await Birds In Artesia's 'Rio Negro'

Last in a Series

By DENISE TESSIER  
Journal Environment Writer

Through the farm fields of Artesia flows an uncommon stream. It winds through more than three miles of crop and pasture land and empties into three ponds that cover an area the size of 85 football fields.

It is jokingly referred to as the "Rio Negro" by farmers and oilmen, because it is literally black.

It is the watery, mineral wastes of Navajo Refining Co., the oil and farm town's largest employer. Where the waters have evaporated, there remains a tar-like goo — a dark contrast to the green and golden alfalfa fields — emitting the pungent odor of sulfur. The sulfur is found in traces of oil, known for its regional sulfuric qualities as "sour crude."

The "Rio Negro" has been a feature of the Artesian landscape 40 years.

The ditch routinely overflows into farmers' fields, killing crops. Cattle and sheep have wandered into the ditch and geese have died in it.

The U.S. Environmental Protection Agency took interest in the settling ponds this summer when it heard they



overflow into the Pecos River a few yards away.

U.S. Fish and Wildlife representatives toured the ponds this summer with another concern — the safety of migrating birds, including the endangered whooping crane.

The first pond resembles a huge tar pit. Everything in it — tumbleweeds, twigs — is black. The second is like a

Continued on A-8

AP Laserphoto

an Walks Through Debris in Balvano  
ge Covers More than 10,156 Square Miles

ALB. Journal 11/25/80

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## To Be Paid

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Leonard Matlovich \$100,000. The money will settle a court fight in which Matlovich threatened to re-enlist. Page F-1.

## St. Helens Active Again

VANCOUVER, Wash. — Mount St. Helens has become active again, scientists said, with light tremors suggesting a new phase for the volcano. Seismograph readings of the tremors were recorded during the weekend. Page F-1.

## 7,200 Acres Ablaze

SAN BERNARDINO, Calif. — Winds howling up to 95 mph sent three fires roaring through 7,200 acres of forest and brush, setting more than 100 houses aflame and forcing hundreds of

## George Raft Dies

HOLLYWOOD — George Raft, one-time film tough guy, died of leukemia in a Los Angeles hospital. He was 85. The actor had been in and out of a coma admitted to the hospital a week ago. Page G-4.

## Iran Steps Up Attacks

Iranian officials say that counterattacks have been stepped up against Iraq positions along 300-mile-long war front. Iran also said Iraq suffered heavy casualties. Page A-3.

## Decision Is Awaited

NEW YORK The National Fed

piece of film or videotape, is keeping a closed mouth over Chicago running back Walter Payton's run-in with and ejection by head linesman Ed Marion. Page E-4.

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Weather	G-4
What's Happening	B-4



Navajo Refinery Discharge Report Review 11-20-80

- (A) No proof <sup>from</sup> that waste water not leaking into shallow aquifer or the Pecos River. A tracer study may resolve this problem.
- (B) Few <sup>water</sup> were <sup>mechanical</sup> samples obtained from observation wells - pump or Hyman Type improved water sampler. (thief sampler)
- (C) What is the direction of ground water flow in this area? Is artesian aquifer leaking upward in vertical direction
- (D) What about spill containment plan.
- (E) ~~What about~~ Dikes need to be built up to withstand maximum flood. Tops of dikes are too thin.
- (F) Waste water should be transported to ponds by way of pipe.
- (G) Ponds should be lined.
- (H) Old ponds should be scraped out and sediment disposed of safely!

Sun day after Thanksgiving





# Environmental NEWS

NEW MEXICO CONSERVATION COORDINATING COUNCIL

April 1980

## NEW MEXICO CONSERVATION COORDINATING COUNCIL BUSINESS:

The next meeting will be Wednesday, May 28, at the home of Jim Lewis, 3401 Mars N.E. It will be a potluck. If you plan to come, please call Cindy Barcelona (who is in the process of moving--her number will be in the next newsletter, along with a map). Topic will be current conservation concerns of the various groups.

### April 4 Meeting -- in review

The April 4 potluck dinner and brainstorming session was a success. The 24 people who attended and represented 12 of the council's 15 members made several decisions.

First, the council will continue. Its functions will be: to publish a newsletter; to meet people from other organizations; to exchange ideas and issues (and identify people working on particular issues); to coordinate ideas and actions; to identify issues and actions which need coordinating; and to provide a forum for member organizations to seek support from the rest of the members.

Meetings will be held the fourth Wednesday of the month and will be held every other month, including summer.

Officers were elected. New president is Bob Semmler, also president of the New Mexico Herpetological Society. He is working on his doctorate in ecology at the University of New Mexico. The new vice president is Bill Hurst, retired regional forester and trustee of the Society for Range Management. The new secretary is Kay Anderson, trustee of the Central New Mexico Audubon Society. Judy Bishop remains treasurer. She is the trustee for the New Mexico Wilderness Study Committee.

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Editor's Note: After three years, this is my last N.M. Environmental News. My husband recently got a promotion--to Arlington, Virginia. I've enjoyed my years of working with the newsletter--and the many people who helped make it possible. Thanks.

Judy Bishop takes over as editor with the May issue. Assisting her will be Aileen Gatterman. Judy may be reached in Santa Fe at 471-4439; Aileen in Albuquerque at 294-7728. News should still be sent to P.O. Box 142, Albuquerque, NM 87103. Judy and Aileen are looking forward to hearing from YOU, so send news!!

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ATTENTION, N.M.C.C.C. TRUSTEES! If your group has not yet paid its \$25 annual dues, please send money now. If you're not sure whether the dues have been paid, please contact Judy Bishop at 1-471-4439.

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## HEARINGS AND MEETINGS

The NEW MEXICO ENVIRONMENTAL HEALTH ASSOCIATION will hold its Second Annual Community Noise Control Seminar April 17 at the Airport Marina Hotel in Albuquerque. For more information on the day-long meeting, contact Don Beard in Albuquerque at 766-6565 or James K. Libberton in Santa Fe at 827-5271, ext. 284.

The CENTRAL NEW MEXICO AUDUBON SOCIETY will meet April 17 at 7:30 p.m. at St. Timothy's Lutheran Church, Copper and Jefferson N.E. Rhea Coppening, assistant to the Southwest Regional Audubon representative, will talk about the upcoming Audubon conference at Ghost Ranch June 23-30.

The CAL-YO (youth group of the Albuquerque Wildlife Federation) will meet April 17 at the Game and Fish

Department meeting room, 6511 Domingo Rd. N.E., at 7 p.m. Larry Smith, migratory bird coordinator for the Fish and Wildlife Service, will talk about the whooping crane recovery program.

The ENVIRONMENTAL PROTECTION AGENCY will hold a public hearing on the draft environmental impact statement and facility plan for upgrading El Paso's Northeast Sewage Treatment Plant under EPA grants on April 17. The hearing will be at 7 p.m. at the El Paso Water Utilities-Public Service Board, Board Room-second floor, 320 S. Campbell, El Paso, Texas. The facility plan, draft statement and additional supporting material for the EIS are available for review at the office of the general manager, El Paso Water Utilities-Public Service Board, 320 S. Campbell, El Paso; El Paso Public Library (Government Documents/Genealogy Section), 501 N. Oregon, El Paso; and EPA's 28th floor library, 1201 Elm St., Dallas. (NMCCC copy of EIS available from Judy Bishop, 471-4439, Santa Fe.) Comments should be sent to Clinton B. Spotts, Regional EIS Coordinator, EPA, Region 6, 1201 Elm St., Dallas, TX 75270, "within 45 days of publication of EPA's Notice of Availability of the EIS in the Federal Register."

EARTH DAY will be April 22. New Mexico coordinator is Claire Reininger, Rt. 1, Box 108-D, Santa Fe, NM 87501 (455-2645). Earth Day '80 will be celebrated in Albuquerque on April 20. Entertainment, speakers, food and booths will be at UNM Johnson Field, Central and Stanford N.E., from 10 a.m. to sundown. More than 30 organizations concerned about the environment, including the Central New Mexico Audubon Society, will be there.

The NEW MEXICO WILDLIFE FEDERATION will hold its convention in Las Cruces April 25-27. For details, contact the office in Albuquerque at 265-7372 from 8 a.m. to 4 p.m. Monday, Wednesday, Thursday or Friday.

Fran Hall will narrate his "Grassroots Jungle," the next Audubon Wildlife Film, on April 28 at UNM's Popejoy Hall. For details on time and cost, contact the box office at 277-3121.

The last of the 1979-80 Audubon Wildlife Film series will be May 6 at Popejoy Hall. Tom Diez will narrate "Gila-Wilder-

ness - Western Adventure." For details, contact the box office at 277-3121.

May 8 is the new date for the hearing in federal court of a suit against the National Park Service brought by the Fund for Animals and three other groups. The suit is over the reduction of burros at Bandelier National Park. The case will be heard by Judge Burciaga at 9:30 a.m. in the 13th floor-West courtroom in the Federal Courthouse, 500 Gold S.W., Albuquerque. (To confirm date and time, contact Judge Burciaga's clerk at 766-3794.)

A temporary restraining order was issued in March to halt NPS reduction of the Bandelier burro population. The suit challenges Park Service compliance with the National Environmental Policy Act (NEPA) and management of animals within the Park Service.

The National Park Service solicited comments from 370 federal, state and local government agencies and interested individuals and groups on management of burros in Bandelier National Park. At the end of the 30-day review period, NPS had received only 17 answers. Only one indicated that no action should be taken.

As a result of responses, the Park Service selected a two-part plan of action: to manage the burro population through direct reduction by shooting; and to manage the population through exclusion by fencing.

For more information, contact John Hunter at Bandelier National Monument, Los Alamos, NM 87544 (672-3861); or Ben Moffett at NPS, P.O. Box 728, Santa Fe, NM 87501 (988-6375).

The NATIONAL ASSOCIATION FOR ENVIRONMENTAL EDUCATION will meet at the University of New Mexico May 25-27. Among the major symposia are: "The Four Corners Energy Development: What Price Do We Pay?" "Native American Lands and Energy Development: Southwestern Cultural and Spiritual Perspectives," and "Environmental Education for Environmental Action." Non-members may attend for \$5. For details, contact Hy and Joan Rosner, 4300 Sunningdale N.E., Albuquerque, NM 87110.

The BUREAU OF LAND MANAGEMENT is offering two environmental education and natural resources workshops this year: one at New Mexico State University

June 2-20 and one at the University of New Mexico July 14-Aug. 1. For details, contact Sally Wisely at BLM in Santa Fe at 988-6316.

The CENTER FOR ANTHROPOLOGICAL STUDIES (P.O. Box 14576, Albuquerque, NM 87191) plans two 16-day safaris to Kenya this year. The first is June 22-July 7. The second is Sept. 21-Oct. 6. Cost per person from Albuquerque is \$2498. For details, contact the center.

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#### COMMENTS REQUESTED

(\*N.M.C.C.C. copy available from Judy Bishop, Santa Fe, 471-4439.)

Radioactive License Change - The Environmental Improvement Division has received a major modification to an application for a Radioactive Material License from Gulf Mineral Resources Co. of Denver for a proposed uranium mill to be located near San Mateo, N.M. The change is documentation supporting below grade burial of tailings in deep trenches, rather than an above grade tailings dam impoundment.

Material is available for review at the Radiation Protection Bureau, EID, Crown Building, 725 St. Michael's Dr., Santa Fe; EID regional office, 4159 Montgomery N.E., Albuquerque; and EID regional office, 708 Uranium Ave., Milan. Written comments and requests for public hearing were due April 4; however, a staff member indicated that comments received before May 1 would probably be considered. Comments/requests should be sent to Uranium Licensing Staff, Radiation Protection Bureau, EID, P.O. Box 968, Santa Fe, NM 87503.

Forest Comments Needed - The Lincoln National Forest is seeking comments on forest planning, including recreation, wood, forage, fish and wildlife, water and soils, transportation, lands, fire and other uses and concerns. Comments should be sent by April 15 to the Forest Supervisor, Lincoln National Forest, Federal Building, 11th and New York, Alamogordo, NM 88310.

Conservationist Award Nominations Open - Nominations are open for the KOB Conservationist of the Year Award. Requests for details and nominations should be sent to Frank Joyce, Chairman, KOB Radio

Awards Committee, P.O. Box 1351, Albuquerque, NM 87103. Nominations must be received by April 18.

\*Fill to Las Huertas Creek - The Corps of Engineers has received an application (No. NM-OYT-0205) from the New Mexico Highway Department to place fill into Las Huertas Creek at the Interstate Highway 25 crossing near Algodones. The project is associated with the construction of an interstate highway crossing. Additional information requests and comments should be sent to the District Engineer, Corps of Engineers, P.O. Box 1580, Albuquerque, NM 87103. Comments should be received by April 23.

More Forest Comments Needed - The Gila National Forest personnel are preparing a forest land and resource management plan, too. They would like comments by April 28. Requests for the brochure which contains preliminary issues and decision criteria already identified and comments should be sent to the Forest Supervisor, Gila National Forest, 2610 W. Silver St., Silver City, NM 88061.

\*Surface Management of Public Lands - The Bureau of Land Management has issued a draft environmental statement on Surface Management of Public Lands Under the U.S. Mining Laws 43 CFR 3809. Copies may be available from the New Mexico State Office of BLM, P.O. Box 1449, Santa Fe, NM 87501. Comments should be sent to the Director (520), BLM, Washington, D.C. 20240, and should be received by May 2.

Game Bird Hunting Regs Proposed - Preliminary hunting regulations for ducks, geese and other migratory game birds for the 1980-81 hunting season have been proposed by the Fish and Wildlife Service. No major changes from last year's regulations are proposed. The proposals were published in the Feb. 29 Federal Register. Comments may be sent through May 16 to the Director (FWS/MBMO), U.S. Fish and Wildlife Service, Washington, D.C. 20240. Hearings will be held in Washington June 20 and Aug. 5.

\*Wilderness Study Area Recommendations - The Bureau of Land Management is seeking comments on its New Mexico Wilderness Study Area Proposals. The report identifies 66 areas, a total of 1,020,823 acres, recommended as Wilderness Study



Big Oil v. Clean Water, Birds, People, Etc.

or

Where Are All Our Regulatory Agencies?

Back in January we reported on Senator Domenici's proposed legislation which would keep the Environmental Protection Agency (EPA) from interfering in effectively run state programs to control the injection of oil brines and other by-products of oil and gas production into drinking water. The bill would put the burden of proof on the EPA.

Since then, the Water Pollution Control Bureau of the New Mexico Environmental Improvement Division has finished its New Mexico Surface Impoundment Assessment February 1980 (SIA), a report to the EPA of work completed under an EPA grant. The report recommends that state, not federal, regulations control surface impoundments because "New Mexico has in place a strong regulatory frame-work which has been tested in court and is working well."

The SIA explains that the New Mexico Water Quality Control Commission has given to the Environmental Improvement Division (EID) jurisdiction over all groundwater and discharges except for certain oil, gas, carbon dioxide gas, geothermal (all regulated by the Oil Conservation Division or OCD) and coal mining discharges. The report points out that all new discharges since June, 1977, are covered by the Water Quality Control Commission regulations unless specifically exempted. Discharges prior to June, 1977, may be required to conform to present standards upon notification by the EID; the EID has not done this because of limited staff. The report shows that all documented or suspected cases of groundwater contamination in New Mexico are from facilities in existence prior to June, 1977.

The report names many specific polluters. One is the Navajo Refinery Co. near Artesia, in Eddy County. The company has wastewater lagoons very close to the Pecos River. The lowest lagoon is routinely flooded and there is a history of spills and breaches which sometimes flow into the river. The problem has been known since at least 1974, when Earl Backenstow prepared An Evaluation of the Navajo Refinery Wastewater Treatment Facilities, Artesia, New Mexico for the

WQCC. Although Rule 116 of the Rules and Regulations of the OCD specify that spills into rivers require immediate notification to the OCD, there seems to be no penalty for failure to do this. Or for allowing repeated spills. R.L. Stamets, technical support chief of OCD, did not know if the company had ever complied with this rule. Many individuals--including Midge Erskine, who operates a bird rehabilitation center in Midland, Texas--have reported seeing spills to the EID and the EPA. No action seems to have been taken against the company. Many bird deaths have been noted in the vicinity of the company.

The SIA also reports on more than 40 wells in Lea County that can no longer be used because of brine contamination. Other sources report additional wells. Most of these occurred before the more stringent laws of June, 1977. A report in 1957 to the Oil Conservation Commission listed 29 wells in about the same area that were contaminated by oil and gas. One was so bad that small sporadic flames were observed when a lighted match was held over an opened water faucet.

A Report to the Water Quality Control Commission on Brine and Phenolic Contamination in Domestic Wells in Lea County in 1973 sums up the situation: "The long-term effect of groundwater pollution, the expense of rehabilitating a brine-polluted aquifer, and the consideration that potable water supplies will still be needed long after the petroleum resources of the area are exhausted, are justifications for considerably more effort to insure that all such pollution is prevented."

The one success to date is Whalen Lake in West Texas. A 630-acre playa lake (only seasonally filled), the lake is owned by the Whalen Corporation, a Dallas-based subsidiary of Triton Oil and Gas Corp. Because migratory waterfowl use the lake (the whole area is on the Central Flyway) and are governed by the Migratory Bird Act, the lake was considered to be involved in interstate commerce. EPA decided it had jurisdiction in this. After several suits, the Railroad Commission of Texas stopped the company's dumping of oil and oil-related byproducts.

Areas. Copies of the proposal with descriptions of each site and maps are available from all BLM offices. Comments should be sent by June 30 to WILDERNESS, New Mexico State Office, P.O. Box 1449, Santa Fe, NM 87501. Included in the proposal is a schedule of public meetings for each district. These will be May 6 in Roswell, May 8 in Carlsbad, May 27 in Albuquerque (Albuquerque Convention Center from 11 a.m. to 2 p.m. and 6 to 9 p.m. with the Albuquerque District in the Acoma Room and the Socorro District in the Isleta Room), May 29 in Socorro, June 2 in Alamogordo, June 4 in Lordsburg, and June 5 in Deming. Details are in the proposal on pages 1-11 through 1-14 (proposals are also in many libraries) or are available from local BLM offices.

Federal Coal in Chaco/San Juan - The Bureau of Land Management manages lands in northwestern New Mexico in the Chaco and San Juan Planning Units which contain an estimated 28 billion tons of low-sulphur coal. This coal is available through strip mining, considered the most economical way to get coal. However, BLM also has the responsibility to see that the lands are "not subjected to indiscriminate development or needless destruction." To that end the Bureau is trying to determine which lands are suitable for mining by finding out through public input how mining would affect social and economic conditions in the area and how it would affect recreation, public health, the environment, wildlife, livestock grazing, archeological sites and other areas of concern. Public comments may be sent until July 1, 1981. In the meantime, there will be an open house on unit resource analysis in Farmington on Oct. 14, in Gallup on Oct. 16, in Crownpoint on Oct. 21, in Nageezi on Oct. 23, in Grants on Oct. 24 and in Albuquerque on Oct. 27, along with other activities in 1981. For more details or to be placed on the BLM mailing list, contact the Albuquerque District Office, BLM, P.O. Box 6770, Albuquerque, NM 87107 (766-2890).

\* \* \*

#### ITEMS OF INTEREST

Musical Offices - The Southwestern Regional Office of the National Park Service in Santa Fe will, contrary to recent reports, remain open.

However, the Region 2 office of the U.S. Fish and Wildlife Service in Albuquerque is scheduled to close. The office, which employs about 200 people full-time, is scheduled to become an area office, which usually has about 20 people. Jerry Stegman, acting regional director, explained that the closing is being made through budget cuts. These have been approved already by the House Interior Appropriations sub-committee. The Senate Interior Appropriations sub-committee has not yet met. If the cuts are approved, the office will be phased out between Oct. 1, 1980, and Sept. 30, 1982, Stegman said. Stegman said about 127 full-time positions would be transferred to the Denver and Atlanta regional offices in an effort to save \$700,000 in the Fiscal Year 81 (which begins Oct. 1, 1980) operating budget. If the office here closes, New Mexico and Arizona will be transferred to the Denver regional office and Oklahoma and Texas will go to the Atlanta regional office.

Anyone interested in protesting this change could write to Congressmen Lujan and Runnels and to Senators Schmitt and Domenici. Senator Schmitt is a member of the Senate Appropriations Committee. (Ed. Note: A question which might be asked is how \$700,000 will be saved if more than 100 employees are moved at the government's expense.)

Incidentally, W.O. Nelson, Jr., the regional director here since the early '70s, retired at the end of February.

Mintzmyer Moves - Lorraine Mintzmyer, formerly the regional director for the Southwest Region of the National Park Service, has been named regional director of the Rocky Mountain Region of the Park Service in Denver. Ms. Mintzmyer is the first woman to be named a regional director for the Park Service.

Robert Kerr, deputy director, will serve as the acting regional director until a permanent replacement is named. Kerr was formerly superintendent at Grand Tetons National Park.

Domenici Backs Research Preserve - Sen. Pete Domenici (R-NM) has introduced legislation in the Senate to create a scientific research preserve in the Magdalena Mountains near Socorro. The bill sets aside 100 square miles near South Baldy Mountain, where several observatories are already. He believes

the area, which has several high mountains, would be ideal for future astronomical research facilities and wants to protect it from potential over-development.

Coal Company Gets Big Lease - Western Coal Co. has been awarded the largest federal coal lease in the country since 1972, the Albuquerque Tribune reported on Mar. 26. The lease was for 3,855 acres about 10 miles west of Farmington and went into effect April 1. The land is managed by BLM. Because the estimated 75 million tons of coal in the area are so deep, the company expects to use underground mining, rather than strip mining, a company official said in the article.

The Whooping Crane: Hunters v. Watchers - The New Mexico Department of Game and Fish has asked the Fish and Wildlife Service to remove the Bosque del Apache whooping crane flock from the endangered list. This would open the refuge to unrestricted hunting. The Southwestern New Mexico Audubon Society, among others, is fighting this action. If you have an opinion, please let the New Mexico Department of Game and Fish, Attention: Harold Olsen, State Capitol, Santa Fe, NM 87503, know.

Diane Taylor, Editor  
New Mexico Conservation Coordinating Council  
Post Office Box 142  
Albuquerque, New Mexico 87103

Two National Natural Landmarks Named - Two New Mexico areas have been designated "National Natural Landmarks" by Interior Secretary Cecil Andrus, the Albuquerque Tribune reported recently. One is the Border Hills structural zone, 24 miles west of Roswell, which covers 1,780 acres and is considered a good example of wrench faulting. The other, Bueyeros shortgrass plain, 17 miles east of Bueyeros in northeastern New Mexico, is an example of the pre-cattle-grazing era grama-buffalo grass prairie.

Several Publications Out - The N.M. Highway Department (P.O. Box 1149, Santa Fe, NM 87503) has released its revised Action Plan. The Center for Anthropological Studies (P.O. Box 14576, Albuquerque, NM 87191) has published Indian Use of the Santa Fe National Forest: A Determination From Ethnographic Sources by Friedlander and Pinyan (\$4 plus \$1 postage and handling) and Jemez Canyon Dam Archaeological Survey Sandoval County, New Mexico by Rodgers (\$5 plus \$1 postage, handling). The 1980 Conservation Directory is available for \$4 from the National Wildlife Federation, 1412 16th St. N.W., Washington, D.C. 20036.

NON-PROFIT ORG. U.S. POSTAGE PAID Albuquerque, NM Permit No. 306
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Nancy C. Childs 2/81  
230 Montoya Circle  
Santa Fe, NM 87501

Next Meeting: May 28



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

April 29, 1980

Navajo Refining Company  
Drawer 159  
Artesia, New Mexico 88210

Re: Request for Discharge Plan

Gentlemen:

Under provisions of the regulations of the Water Quality Control Commission I am hereby requesting the filing of a discharge plan for Navajo's Artesia Refinery.

This plan should cover all discharges of effluent at the refinery site and to the waste water lagoons located adjacent to the Pecos River. Section 3-106 A. of the regulations requires submittal of the discharge plan within 120 days of receipt of this notice unless an extension of this time period is sought and approved.

The discharge plan should be prepared in accordance with Part 3 of the Regulations, a copy of which is forwarded herewith. Due to a recent court decision references to "toxic pollutants" may be ignored.

If there are any questions on this matter, please do not hesitate to call me or Thomas Parkhill at 827-3260. Mr. Parkhill has been assigned responsibility for review of all discharge plans.

Yours very truly,

JOE D. RAMEY  
Director

*Joe Ramey 29, 1981*

cc: OCD Artesia District Office

enc.



## Environmental News

DOUG BARBER  
(214) 767-2630

FOR IMMEDIATE RELEASE

APRIL 24, 1980

The Environmental Protection Agency has issued a notice of noncompliance to Navajo Refining Company and a consent agreement and final order to Oklahoma Electric Cooperative, Inc., regarding violations of the Toxic Substances Control Act (TSCA).

Navajo Refining Company, located in Artesia, New Mexico has been issued a notice of noncompliance for failure to maintain complete polychlorinated biphenyl (PCB) records.

The notice requires the company to take "immediate" remedial action and states it could be subject to a penalty of up to \$25,000 per day for failure to remedy that violation.

Oklahoma Electric Cooperative, Inc. in Norman, Oklahoma, has been fined \$2500 for unlawful and improper disposal of PCBs, failure to provide proper storage of PCBs, failure to properly mark PCBs, and failure to maintain complete records.

The Cooperative is a nonprofit organization and has corrected all violations noted at the time of the complaint, at a cost of \$16,000. There was no waterway contamination.

Most of the PCBs marketed in the United States are still in service, primarily in electrical equipment.

PCBs are harmful because once released into the environment they do not break apart into new chemical arrangements, instead they bioaccumulate in organisms throughout the environment. In addition, PCBs accumulate in the tissues of living organisms.

(more)

There are well documented tests which show PCBs cause reproductive failures, gastric disorders, skin lesions, and tumors in laboratory animals.

Studies of workers exposed to PCBs have shown a number of symptoms and adverse effects including chloracne and other epidermal disorders, digestive disturbances, jaundice, impotence, throat and respiratory irritations, and severe headaches.

# # #

United States  
Environmental Protection  
Agency

Region 6  
Office of Public Awareness (6AA)  
First International Building  
1201 Elm Street  
Dallas, TX 75270

Official Business  
Penalty for Private Use  
\$300

9 R L STAMETS  
6 TECH SUPPORT CHIEF PIO  
0 OIL CONSERVATION COMMISSION  
2 PO BOX 2088  
2 SANTA FE NM 87501

R6

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Protection  
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EPA-335



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MAY 28 1980  
OIL CONSERVATION DIVISION  
SANTA FE

TELEPHONE  
A. C. (505) 746-9851



# REFINING COMPANY

501 EAST MAIN STREET • P. O. DRAWER 159

TELETYPE  
910-986-0990

ARTESIA, NEW MEXICO - 88210

November 6, 1978

Mr. Eddie Seay  
Oil Conservation Division  
P. O. Box 1980  
Hobbs, NM 88240

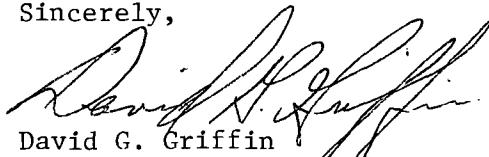
Dear Mr. Seay:

Enclosed you will find the information requested in a memo from Joe D. Ramsey dated October 6, 1978. I have provided a blueprint which was drawn up when Navajo enlarged Pond 3. This blueprint contains the information requested in (1) and (2) of the memorandum.

The information requested in (3) and (4) is provided on a separate sheet. In the case of the chemical analysis of the fluid placed in the interconnected pond system, I have provided analysis information summarized from monthly analyses taken over the past year.

Please contact me if you have further questions.

Sincerely,

  
David G. Griffin  
Environmental Coordinator

DGG:se

*Handwritten:* Routed  
1/25/79  
849

ANALYSIS OF EFFLUENT IN EVAPORATION PONDS

Parts per Million

	P-Alk.	M-Alk.	pH	Hardness	Cl <sup>-</sup>	F <sup>-</sup>	Sulfide	Phenol
Pond 1								
Average	38	217	8.24	813	1051	27.8	17.9	30
Range	0-180	138-350	7.06-10.03	350-1130	860-1300	10.5-59.0	0-73.6	12-100
Pond 2								
Average	0	208	7.40	1003	1362	18.1	0.8	3.0
Range	0	96-330	6.93-8.33	330-1390	1040-1680	10.5-27.0	0-7.2	0-25
Pond 3								
Average	0	157	7.13	1312	1701	16.5	0.3	0.8
Range	0	84-242	6.75-7.52	330-2280	830-2810	10.5-22.0	0-3.2	0-7

Yearly Quantity of Effluent

Daily effluent quantity averages 720,000 gal/D  
(720,000 gal/D)(365 D/yr) = 262.8 x 10<sup>6</sup> gals/yr