

**GW -** 28

# **MONITORING REPORTS**

**DATE:**

1995

TELEPHONE  
(505) 748-3311

EASYLINE  
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

April 11, 1995

Mr. Bill Olson  
Geologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

**RE: QUARTERLY REPORT GROUND WATER REMEDIATION, NAVAJO REFINING CO.,  
EDDY COUNTY, NEW MEXICO**

Dear Bill:

Enclosed are the results from the sampling on our monitor wells. Since we were behind on the schedule you suggested in your July 25, 1994 letter, we did the annual sampling this time. We have also included a map of the ground water potentiometric surface for this quarter as well as a map of the product thickness in the monitor wells.

As of this time, we have not started injecting into the ground or discharging this water to our farm. The water is still being put through the API oil/water separator and eventually ends up in the ponds. To date, we have recovered at least 124,139 gallons of product from the four wells on Bolton Road. We have had problems keeping water out of the product guages in these wells. When water gets in them, they freeze up and have to be replaced. Therefore, there has been some amount of product that has been recovered but not measured.

We have also pumped at least 13,280,000 gallons of water from the four wells on Bolton Road. This is broken down as follows: Bolton Road RW #1 - 1,345,000 Bolton Road RW #2 - 1,980,000 Bolton Road RW #3 - 4,090,000 and Bolton Road RW#4 - 5,865,000. We have also had problems with these guages. Because of the make-up of this water (pH, conductivity, organics, etc) these guages don't last a long time. The net result being, we have pumped more water than these guages show. We have ordered electric guages that are designed for this service to install on all the recovery wells both inside and outside the plant.

The recovery wells inside the plant (RW 7,8,9, and 10) do not have working guages on them. We are in the process of getting the new guages installed. Again, I was under the erroneous assumption that these were not due until we started injecting. Therefore we are just getting organized to fulfill all of your requests.

Due to my error as to when we were to start filing these reports, we don't have accurate numbers for the amount of fluid pumped during the last quarter. We will be sending quarterly fluid amounts in subsequent reports.

You will notice that several of the irrigation wells have hits of Carbon Disulfide. We have talked to our lab about this because we feel these are contaminants. Also, we show a hit of 34 ppb ethylbenzene in KWB-11A. This is an odd occurrence since no other 624 compounds were noticed. We would expect to see other BTEX compounds. The lab is looking into this to see if there were other compounds that were missed or if this spike was wrongly interpreted as ethylbenzene. I have heard that on old spills you will sometimes see ethylbenzene and not benzene but this is a first for us. Finally, RA-314 was not sampled because it was not running on the day samples were collected. Usually if a well isn't running, I will find the farmer or tenant and get the well turned on long enough to collect samples. I couldn't find anyone that day, so we by-passed it until next month.

Thank you for your time in this matter. By the next quarterly report, we should be completely up to speed. If there are any questions, please call me at 505-748-3311.

Very truly yours,

NAVAJO REFINING COMPANY

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

Enclosures

[illegible]



RA-4196

[illegible]

[illegible]



RA-314 ONLY DURING IRRIGATION SEASON

[illegible]













[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

6701 Aberdeen Avenue

Lubbock, Texas 79424

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ANALYTICAL RESULTS FOR  
 NAVAJO REFINING COMPANY  
 Attention: Darrell Moore  
 501 E. Main  
 Artesia, NM 88210

PAGE 1 of 2

March 24, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/18/95

Sampling Date: 03/9-10/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33153<br>RA-2723 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 50                 |
| 4-Methyl-2-pentanone      | ND                | 1                  |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 50                 |
| 2-Hexanone                | ND                |                    |

**TRACE ANALYSIS, INC.**  
 A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING CO.

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33153<br>RA-2723 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 107 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 100 |

\*ND = Not Detected

METHODS: EPA 624



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
Date

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Lubbock, Texas 79424

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

December 13, 1994

Receiving Date: 12/10/94

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 12/12/94

Sampling Date: 12/09/94

Sample Condition: Intact & Cool

Sample Received by: BL

Project Name: NA

| TA# | Field Code | MTBE<br>(ppb) | BENZENE<br>(ppb) | TOLUENE<br>(ppb) | ETHYL-<br>BENZENE<br>(ppb) | M,P,O<br>XYLENE<br>(ppb) | TOTAL<br>BTX<br>(ppb) |
|-----|------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|
|-----|------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|

|        |                 |     |     |     |     |     |    |
|--------|-----------------|-----|-----|-----|-----|-----|----|
| T29581 | RA - 2723       | <1  | <1  | <1  | <1  | <1  | <1 |
| QC     | Quality Control | 186 | 185 | 183 | 183 | 550 |    |

Detection Limit

1 1 1 1 1

|                       |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|
| % Precision           | 92  | 99  | 99  | 98  | 98  |
| % Extraction Accuracy | 102 | 102 | 101 | 102 | 102 |
| % Instrument Accuracy | 93  | 93  | 92  | 92  | 92  |

METHODS: EPA SW 846-8020.

BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

12-13-94

# TRACE ANALYSIS, INC.

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## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

January 16, 1995

Receiving Date: 01/13/95

Sample Type: Water

Project No: NA

Project Location: NA

Analysis Date: 01/13/95

Sampling Date: 01/12/95

Sample Condition: Intact & Cool

Sample Received by: MCD

Project Name: NA

| TA#    | Field Code      | MTBE<br>(ppb) | BENZENE<br>(ppb) | TOLUENE<br>(ppb) | ETHYL-<br>BENZENE<br>(ppb) | M,P,O<br>XYLENE<br>(ppb) | TOTAL<br>BTX<br>(ppb) |
|--------|-----------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|
| T30947 | RA - 2723       | <1            | <1               | <1               | <1                         | <1                       | <1                    |
| QC     | Quality Control | 173           | 213              | 210              | 208                        | 624                      |                       |

Detection Limit

1 1 1 1 1

% Precision

100 100 100 100 100

% Extraction Accuracy

86 107 106 105 105

% Instrument Accuracy

87 107 106 104 104

METHODS: EPA SW 846-8020.

BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

*BS*

*1-16-95*

# TRACE ANALYSIS, INC.

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ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

January 30, 1995

Receiving Date: 01/27/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 01/27/95

Sampling Date: 01/26/95

Sample Condition: Intact & Cool

Sample Received by: DA

Project Name: RA

| TA#    | Field Code      | MTBE<br>(ppb) | BENZENE<br>(ppb) | TOLUENE<br>(ppb) | ETHYL-<br>BENZENE<br>(ppb) | M,P,O<br>XYLENE<br>(ppb) | TOTAL<br>BTX<br>(ppb) |
|--------|-----------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|
| T31527 | RA - 2723       | <1            | <1               | <1               | <1                         | <1                       | <1                    |
| T31528 | RA - 4196       | <1            | <1               | <1               | <1                         | <1                       | <1                    |
| T31529 | RA - 4798       | <1            | <1               | <1               | <1                         | <1                       | <1                    |
| QC     | Quality Control | 195           | 211              | 206              | 205                        | 610                      |                       |

Detection Limit

1

1

1

1

1

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

93

98

98

98

98

98

96

106

98

108

106

104

103

102

METHODS: EPA SW 846-8020.

BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

1-30-95



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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: David Griffin

501 E. Main

Artesia, NM 88210

February 14, 1995

Receiving Date: 02/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 02/11/95

Sampling Date: 02/10/95

Sample Condition: Intact & Cool

Sample Received by: BL

Project Name: NA

| TA#    | Field Code      | BENZENE<br>(ppb) | TOLUENE<br>(ppb) | ETHYL-<br>BENZENE<br>(ppb) | M, P, O<br>XYLENE<br>(ppb) | TOTAL<br>BTX<br>(ppb) |
|--------|-----------------|------------------|------------------|----------------------------|----------------------------|-----------------------|
| T32135 | RA - 2723       | <1               | <1               | <1                         | <1                         | <1                    |
| T32136 | RA - 4196       | <1               | <1               | <1                         | <1                         | <1                    |
| T32137 | RA - 4798       | <1               | <1               | <1                         | 3                          | 3                     |
| QC     | Quality Control | 197              | 181              | 176                        | 521                        |                       |

Detection Limit

1

1

1

1

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

99 99 99 99  
99 99 98 88  
99 91 88 87

METHODS: EPA SW 846-8020.  
BTX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

2-14-95



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# TRACE ANALYSIS, INC.

ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

February 27, 1995

Receiving Date: 02/23/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 02/26/95

Sampling Date: 02/22/95

Sample Condition: Intact & Cool

Sample Received by: DA

Project Name: NA

| TA# | Field Code | MTBE<br>(ppb) | BENZENE<br>(ppb) | TOLUENE<br>(ppb) | ETHYL-<br>BENZENE<br>(ppb) | M,P,O<br>XYLENE<br>(ppb) | TOTAL<br>BTX<br>(ppb) |
|-----|------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|
|-----|------------|---------------|------------------|------------------|----------------------------|--------------------------|-----------------------|

|        |                 |     |     |     |     |     |    |
|--------|-----------------|-----|-----|-----|-----|-----|----|
| T32436 | RA - 2723       | <1  | <1  | <1  | <1  | <1  | <1 |
| T32437 | RA - 4196       | <1  | <1  | <1  | <1  | <1  | <1 |
| T32438 | RA - 4798       | <1  | <1  | <1  | <1  | <1  | <1 |
| T32439 | RA - 5000       | <1  | <1  | <1  | <1  | <1  | <1 |
| QC     | Quality Control | 197 | 202 | 197 | 195 | 611 |    |

|                 |   |   |   |   |   |   |  |
|-----------------|---|---|---|---|---|---|--|
| Detection Limit | 1 | 1 | 1 | 1 | 1 | 1 |  |
|-----------------|---|---|---|---|---|---|--|

|                       |     |     |     |     |     |     |  |
|-----------------------|-----|-----|-----|-----|-----|-----|--|
| % Precision           | 102 | 100 | 100 | 100 | 100 | 100 |  |
| % Extraction Accuracy | 106 | 101 | 99  | 99  | 99  | 103 |  |
| % Instrument Accuracy | 99  | 101 | 99  | 98  | 102 |     |  |

METHODS: EPA SW 846-8020.  
BTX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.

2-27-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33154<br>RA-4196 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | 2                 | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33154<br>RA-4196 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 107 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95

Date

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ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

PAGE 1 of 2

March 24, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/18/95

Sampling Date: 03/9-10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33156<br>RA-4798 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | 6                 | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33156<br>RA-4798 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 107 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33157<br>RA-1331 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | 7                 | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |



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Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33157<br>RA-1331 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

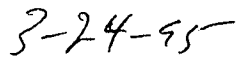
## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 107 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell  
\_\_\_\_\_  
Date



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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33155<br>RA-307 | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 1                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 1                  |
| Carbon disulfide          | 3                | 1                  |
| Methylene chloride        | ND               | 1                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1-Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | 1                | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33155<br>RA-307 | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 108 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 100 |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/18/95

Sampling Date: 03/9-10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33152<br>RA-313 | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 1                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 1                  |
| Carbon disulfide          | ND               | 1                  |
| Methylene chloride        | ND               | 1                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1-Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | ND               | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33152<br>RA-313 | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 105 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33159<br>RA-1227 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33159<br>RA-1227 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 110 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33161<br>RA-3156 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33161<br>RA-3156 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 109 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95

Date



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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33165<br>RA-3353 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33165<br>RA-3353 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 103 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/21/95

Sampling Date: 03/10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

TA# Field Code

POTASSIUM  
(mg/L)

MAGNESIUM  
(mg/L)

CALCIUM  
(mg/L)

SODIUM  
(mg/L)

T33167 KWB - 1A  
QC Quality Control

1.4

51.4

364

20.2

395

20.2

293

20.2

Detection Limit

0.1

0.1

0.05

0.1

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

98

114

103

101

99

101

100

100

101

96

95

101

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

3-23-95



TRACE ANALYSIS, INC.

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ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/15/95  
Sampling Date: 03/10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

| TA# | FIELD CODE | CHLORIDE | FLUORIDE | SULFATE | ALKALINITY                   |  |
|-----|------------|----------|----------|---------|------------------------------|--|
|     |            | (mg/L)   | (mg/L)   | (mg/L)  | (mg/L as CaCO <sub>3</sub> ) |  |

|        |                 |     |      |       |     |     |
|--------|-----------------|-----|------|-------|-----|-----|
| T33167 | KWB - 1A        | 333 | 1.2  | 2,365 | 429 | 0   |
| QC     | Quality Control | 504 | 1.04 | 11    | --- | --- |

|                       |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|
| % Precision           | 99  | 109 | 101 | 98  | 98  |
| % Extraction Accuracy | 98  | 114 | 109 | --- | --- |
| % Instrument Accuracy | 101 | 102 | 102 | --- | --- |

|                 |   |     |   |    |    |
|-----------------|---|-----|---|----|----|
| DETECTION LIMIT | 1 | 0.1 | 1 | 10 | 10 |
|-----------------|---|-----|---|----|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.  
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell  
Date

# TRACE ANALYSIS, INC.

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March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/00/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33167                | KWB - 1A        | <0.1         | <0.05        | <0.01        | <0.01        | <0.01        | <0.05        | <0.01        | 0.03         | <0.05        | 0.2          | <0.05       |
| QC                    | Quality Control | 5.2          | 5.27         | 5.28         | 5.26         | 5.29         | 5.33         | 5.20         | 5.26         | 5.29         | 5.3          | 5.32        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 99           | 100          | 99           | 100          | 99           | 100          | 97           | 99           | 100          | 99          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 105          | 98           | 96           | 100          | 94           | 100          | 100          | 97           | 94           | 100          | 100         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 105          | 106          | 105          | 106          | 107          | 104          | 105          | 106          | 106          | 106         |
| Cu                    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)      |
| T33167                | KWB - 1A        | <0.05        | 0.14         | 0.69         | <0.5         | <0.5         | <0.001       | <0.001       | <0.001       | <0.001       | <0.001       | <0.001      |
| QC                    | Quality Control | 5.28         | 5.14         | 5.14         | 5.5          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.05         | 0.05         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        | 0.001        |             |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 98           | 99           | 97           | 99           | 94           | 100          | 100          | 108          | 100          |              |             |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 96           | 101          | 105          | 95           | 76           | 100          | 92           | 108          | 88           |              |             |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 106          | 103          | 103          | 104          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33167<br>KWB-1A | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 100                |
| Chloromethane             | ND               | 100                |
| Vinyl chloride            | ND               | 100                |
| Bromomethane              | ND               | 100                |
| Chloroethane              | ND               | 100                |
| Trichlorofluoromethane    | ND               | 100                |
| 1,1-Dichloroethene        | ND               | 100                |
| Iodomethane               | ND               | 100                |
| Carbon disulfide          | ND               | 100                |
| Methylene chloride        | ND               | 100                |
| trans-1,2-Dichloroethene  | ND               | 100                |
| 1,1-Dichloroethane        | ND               | 100                |
| Vinyl acetate             | ND               | 100                |
| 2-Butanone                | ND               | 5,000              |
| Chloroform                | ND               | 100                |
| 1,1,1-Trichloroethane     | ND               | 100                |
| 1,2-Dichloroethane        | ND               | 100                |
| Benzene                   | 4,409            | 100                |
| Carbon Tetrachloride      | ND               | 100                |
| 1,2-Dichloropropane       | ND               | 100                |
| Trichloroethene           | ND               | 100                |
| Bromodichloromethane      | ND               | 100                |
| cis-1,3-Dichloropropene   | ND               | 100                |
| 4-Methyl-2-pentanone      | ND               | 5,000              |
| trans-1,3-Dichloropropene | ND               | 100                |
| Toluene                   | ND               | 100                |
| 1,1,2-Trichloroethane     | ND               | 100                |
| 2-Hexanone                | ND               | 5,000              |

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Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33167<br>KWB-1A | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 100                |
| Tetrachloroethene           | ND               | 100                |
| Chlorobenzene               | ND               | 100                |
| Ethylbenzene                | ND               | 100                |
| m & p-Xylene                | ND               | 100                |
| Bromoform                   | ND               | 100                |
| Styrene                     | ND               | 100                |
| o-Xylene                    | ND               | 100                |
| 1,1,2,2-Tetrachloroethane   | ND               | 100                |
| trans 1,4-Dichloro-2-butene | ND               | 500                |
| cis 1,4-Dichloro-2-butene   | ND               | 500                |
| 1,4-Dichlorobenzene         | ND               | 200                |
| 1,3-Dichlorobenzene         | ND               | 200                |
| 1,2-Dichlorobenzene         | ND               | 200                |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 104 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

| PAH's                  |       | T33167 |       |     |     |     |
|------------------------|-------|--------|-------|-----|-----|-----|
| EPA 625 (ppm)          | DL    | KWB-1A | QC    | %P  | %EA | %IA |
| Naphthalene            | 0.001 | 0.040  | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND     | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND     | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND     | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND     | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND     | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND     | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND     | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND     | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND     | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND     | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND     | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND     | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND     | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND     | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND     | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 57  |
| Phenol-d6 SURR            | 47  |
| Nitrobenzene-d5 SURR      | 83  |
| 2-Fluorobiphenyl SURR     | 97  |
| 2,4,6-Tribromophenol SURR | 37  |
| Terphenyl-d14 SURR        | 154 |

METHODS: EPA 625.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
DATE

  
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## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/21/95

Sampling Date: 03/10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

| TA# | Field Code | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|-----|------------|---------------------|---------------------|-------------------|------------------|
|-----|------------|---------------------|---------------------|-------------------|------------------|

|        |                 |      |      |      |      |
|--------|-----------------|------|------|------|------|
| T33168 | KWB - 1C        | 4.1  | 213  | 270  | 191  |
| QC     | Quality Control | 51.4 | 20.2 | 20.2 | 20.2 |

|                 |  |     |     |      |     |
|-----------------|--|-----|-----|------|-----|
| Detection Limit |  | 0.1 | 0.1 | 0.05 | 0.1 |
|-----------------|--|-----|-----|------|-----|

|                       |  |     |     |     |     |
|-----------------------|--|-----|-----|-----|-----|
| % Precision           |  | 98  | 101 | 100 | 96  |
| % Extraction Accuracy |  | 114 | 99  | 100 | 95  |
| % Instrument Accuracy |  | 103 | 101 | 101 | 101 |

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

3-23-95

Date

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

TA# FIELD CODE

CHLORIDE  
(mg/L)

FLUORIDE  
(mg/L)

SULFATE  
(mg/L)

ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>

T33168 KWB - 1C  
QC Quality Control

303  
504

1.1  
1.04

1,817  
11

484  
---

0  
---

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

99  
98  
101

109  
114  
102

101  
109  
102

104  
---

104  
---

DETECTION LIMIT

1

0.1

1

10

10

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.  
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

3-23-95

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March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

## TOTAL METALS

Analysis Date: 03/20/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

| TA# | FIELD CODE | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|

|        |                 |      |       |       |       |       |       |       |      |       |     |       |
|--------|-----------------|------|-------|-------|-------|-------|-------|-------|------|-------|-----|-------|
| T33168 | KWB - 1C        | <0.1 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | <0.01 | 1.40 | <0.05 | 0.1 | <0.05 |
| QC     | Quality Control | 5.2  | 5.27  | 5.28  | 5.26  | 5.29  | 5.33  | 5.20  | 5.26 | 5.29  | 5.3 | 5.32  |

|                 |  |     |      |      |      |      |      |      |      |      |     |      |
|-----------------|--|-----|------|------|------|------|------|------|------|------|-----|------|
| DETECTION LIMIT |  | 0.1 | 0.05 | 0.01 | 0.01 | 0.01 | 0.05 | 0.01 | 0.01 | 0.05 | 0.1 | 0.05 |
|-----------------|--|-----|------|------|------|------|------|------|------|------|-----|------|

|                       |  |     |     |     |     |     |     |     |     |     |     |     |
|-----------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           |  | 102 | 99  | 100 | 99  | 100 | 99  | 100 | 97  | 99  | 100 | 99  |
| % Extraction Accuracy |  | 105 | 98  | 96  | 100 | 94  | 100 | 100 | 97  | 94  | 100 | 100 |
| % Instrument Accuracy |  | 104 | 105 | 106 | 105 | 106 | 107 | 104 | 105 | 106 | 106 | 106 |

|  | Cu<br>(mg/L) | Al<br>(mg/L) | B<br>(mg/L) | Ba<br>(mg/L) | U<br>(mg/L) | Hg<br>(mg/L) | Se<br>(mg/L) | Ag<br>(mg/L) | Pb<br>(mg/L) |
|--|--------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
|--|--------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|

|        |                 |       |      |      |      |      |        |        |        |
|--------|-----------------|-------|------|------|------|------|--------|--------|--------|
| T33168 | KWB - 1C        | <0.05 | 0.06 | 0.44 | <0.5 | <0.5 | <0.001 | <0.001 | <0.001 |
| QC     | Quality Control | 5.28  | 5.14 | 5.14 | 5.5  | 9.8  | 0.022  | 0.045  | 0.108  |

|                 |  |      |      |      |     |     |       |       |       |
|-----------------|--|------|------|------|-----|-----|-------|-------|-------|
| DETECTION LIMIT |  | 0.05 | 0.05 | 0.05 | 0.5 | 0.5 | 0.001 | 0.001 | 0.001 |
|-----------------|--|------|------|------|-----|-----|-------|-------|-------|

|                       |  |     |     |     |     |     |     |     |     |
|-----------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           |  | 98  | 99  | 97  | 99  | 94  | 100 | 100 | 108 |
| % Extraction Accuracy |  | 96  | 101 | 105 | 95  | 76  | 100 | 92  | 108 |
| % Instrument Accuracy |  | 106 | 103 | 103 | 104 | 100 | 100 | 90  | 108 |

## METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

DATE

3-23-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/18/95

Sampling Date: 03/9-10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33168<br>KWB-1C | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 100                |
| Chloromethane             | ND               | 100                |
| Vinyl chloride            | ND               | 100                |
| Bromomethane              | ND               | 100                |
| Chloroethane              | ND               | 100                |
| Trichlorofluoromethane    | ND               | 100                |
| 1,1-Dichloroethene        | ND               | 100                |
| Iodomethane               | ND               | 100                |
| Carbon disulfide          | ND               | 100                |
| Methylene chloride        | ND               | 100                |
| trans-1,2-Dichloroethene  | ND               | 100                |
| 1,1-Dichloroethane        | ND               | 100                |
| Vinyl acetate             | ND               | 100                |
| 2-Butanone                | ND               | 5,000              |
| Chloroform                | ND               | 100                |
| 1,1,1-Trichloroethane     | ND               | 100                |
| 1,2-Dichloroethane        | ND               | 100                |
| Benzene                   | 3,483            | 100                |
| Carbon Tetrachloride      | ND               | 100                |
| 1,2-Dichloropropane       | ND               | 100                |
| Trichloroethene           | ND               | 100                |
| Bromodichloromethane      | ND               | 100                |
| cis-1,3-Dichloropropene   | ND               | 100                |
| 4-Methyl-2-pentanone      | ND               | 5,000              |
| trans-1,3-Dichloropropene | ND               | 100                |
| Toluene                   | ND               | 100                |
| 1,1,2-Trichloroethane     | ND               | 100                |
| 2-Hexanone                | ND               | 5,000              |

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Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33168<br>KWB-1C | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 100                |
| Tetrachloroethene           | ND               | 100                |
| Chlorobenzene               | ND               | 100                |
| Ethylbenzene                | ND               | 100                |
| m & p-Xylene                | ND               | 100                |
| Bromoform                   | ND               | 100                |
| Styrene                     | ND               | 100                |
| o-Xylene                    | ND               | 100                |
| 1,1,2,2-Tetrachloroethane   | ND               | 100                |
| trans 1,4-Dichloro-2-butene | ND               | 500                |
| cis 1,4-Dichloro-2-butene   | ND               | 500                |
| 1,4-Dichlorobenzene         | ND               | 200                |
| 1,3-Dichlorobenzene         | ND               | 200                |
| 1,2-Dichlorobenzene         | ND               | 200                |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 103 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33168**

| EPA 625 (ppm)          | DL    | KWB-1C | QC    | %P  | %EA | %IA |
|------------------------|-------|--------|-------|-----|-----|-----|
| Naphthalene            | 0.001 | ND     | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND     | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND     | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND     | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND     | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND     | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND     | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND     | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND     | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND     | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND     | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND     | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND     | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND     | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND     | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND     | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 29  |
| Phenol-d6 SURR            | 33  |
| Nitrobenzene-d5 SURR      | 76  |
| 2-Fluorobiphenyl SURR     | 90  |
| 2,4,6-Tribromophenol SURR | 21  |
| Terphenyl-d14 SURR        | 148 |

**METHODS: EPA 625.**

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
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## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

| TA#    | Field Code      | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|--------|-----------------|---------------------|---------------------|-------------------|------------------|
| T33166 | KWB - 2A        | 0.4                 | 142                 | 242               | 91.7             |
| QC     | Quality Control | 51.4                | 20.2                | 20.2              | 20.2             |

Detection Limit 0.1 0.1 0.05 0.1

% Precision 98 101 100 96  
% Extraction Accuracy 114 99 100 95  
% Instrument Accuracy 103 101 101 101

METHODS: EPA 200.7.  
QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

3-23-95



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March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/15/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

| TA#    | FIELD CODE      | CHLORIDE |  | FLUORIDE |  | SULFATE |  | ALKALINITY                   |     |
|--------|-----------------|----------|--|----------|--|---------|--|------------------------------|-----|
|        |                 | (mg/L)   |  | (mg/L)   |  | (mg/L)  |  | (mg/L as CaCO <sub>3</sub> ) |     |
| T33166 | KWB - 2A        | 157      |  | 1.1      |  | 1,578   |  | 267                          | 0   |
| QC     | Quality Control | 504      |  | 1.04     |  | 11      |  | ---                          | --- |

|                       |     |  |     |  |     |  |     |  |     |
|-----------------------|-----|--|-----|--|-----|--|-----|--|-----|
| % Precision           | 100 |  | 109 |  | 101 |  | 98  |  | 98  |
| % Extraction Accuracy | 99  |  | 114 |  | 109 |  | --- |  | --- |
| % Instrument Accuracy | 101 |  | 102 |  | 102 |  | --- |  | --- |

|                 |   |  |     |  |   |  |    |  |    |
|-----------------|---|--|-----|--|---|--|----|--|----|
| DETECTION LIMIT | 1 |  | 0.1 |  | 1 |  | 10 |  | 10 |
|-----------------|---|--|-----|--|---|--|----|--|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.  
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

3-23-95

Date



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA#    | FIELD CODE            | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|--------|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33166 | KWB - 2A              | <0.1         | <0.05        | <0.01        | 0.46         | <0.01        | <0.05        | <0.01        | 0.02         | <0.05        | <0.1         | <0.05       |
| QC     | Quality Control       | 5.2          | 5.27         | 5.28         | 5.26         | 5.29         | 5.33         | 5.20         | 5.26         | 5.29         | 5.3          | 5.32        |
|        | DETECTION LIMIT       | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
|        | % Precision           | 102          | 99           | 100          | 99           | 100          | 99           | 100          | 97           | 99           | 100          | 99          |
|        | % Extraction Accuracy | 105          | 98           | 96           | 100          | 94           | 100          | 100          | 97           | 94           | 100          | 100         |
|        | % Instrument Accuracy | 104          | 105          | 106          | 105          | 106          | 107          | 104          | 105          | 106          | 106          | 106         |
|        |                       | Cu           | Al           | B            | Ba           | U            | Hg           | Se           | Ag           | Pb           |              |             |
|        |                       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       |              |             |
| T33166 | KWB - 2A              | <0.05        | 0.13         | 0.20         | <0.5         | <0.5         | <0.001       | <0.001       | <0.001       | <0.001       |              |             |
| QC     | Quality Control       | 5.28         | 5.14         | 5.14         | 5.5          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
|        | DETECTION LIMIT       | 0.05         | 0.05         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        |              |             |
|        | % Precision           | 98           | 99           | 97           | 99           | 94           | 100          | 100          | 108          | 100          |              |             |
|        | % Extraction Accuracy | 96           | 101          | 105          | 95           | 76           | 100          | 92           | 108          | 88           |              |             |
|        | % Instrument Accuracy | 106          | 103          | 103          | 104          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

*BB*

3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

6701 Aberdeen Avenue  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33166<br>KWB-2A | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 1                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 1                  |
| Carbon disulfide          | ND               | 1                  |
| Methylene chloride        | ND               | 1                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1-Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | ND               | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33166<br>KWB-2A | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 104 |
| Toluene-d8           | 97  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

| PAH's                  |       | T33166 |       |     |     |     |
|------------------------|-------|--------|-------|-----|-----|-----|
| EPA 625 (ppm)          | DL    | KWB-2A | QC    | %P  | %EA | %IA |
| Naphthalene            | 0.001 | ND     | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND     | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND     | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND     | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND     | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND     | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND     | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND     | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND     | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND     | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND     | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND     | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND     | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND     | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND     | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND     | 0.481 |     |     | 96  |

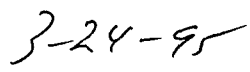
\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 72  |
| Phenol-d6 SURR            | 63  |
| Nitrobenzene-d5 SURR      | 82  |
| 2-Fluorobiphenyl SURR     | 97  |
| 2,4,6-Tribromophenol SURR | 43  |
| Terphenyl-d14 SURR        | 156 |

METHODS: EPA 625.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

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FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

| TA#    | Field Code      | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|--------|-----------------|---------------------|---------------------|-------------------|------------------|
| T33164 | KWB - 3A        | 0.8                 | 250                 | 478               | 372              |
| QC     | Quality Control | 51.4                | 20.2                | 20.2              | 20.2             |

Detection Limit 0.1 0.1 0.05 0.1

% Precision 98 101 100 96  
% Extraction Accuracy 114 99 100 95  
% Instrument Accuracy 103 101 101 101

## METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

3-23-95

# TRACE ANALYSIS, INC.

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## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

TA# FIELD CODE

CHLORIDE  
(mg/L)

FLUORIDE  
(mg/L)

SULFATE  
(mg/L)

ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>

| TA#    | FIELD CODE      | CHLORIDE<br>(mg/L) | FLUORIDE<br>(mg/L) | SULFATE<br>(mg/L) | ALKALINITY<br>(mg/L as CaCO <sub>3</sub> )<br>HCO <sub>3</sub> CO <sub>3</sub> |
|--------|-----------------|--------------------|--------------------|-------------------|--------------------------------------------------------------------------------|
| T33164 | KWB - 3A        | 445                | 0.5                | 2,500             | 323 0                                                                          |
| QC     | Quality Control | 504                | 1.1                | 11                | ---                                                                            |

| % Precision | % Extraction Accuracy | % Instrument Accuracy |
|-------------|-----------------------|-----------------------|
| 100         | 100                   | 101                   |
| 99          | 109                   | 109                   |
| 101         | 106                   | 102                   |

| DETECTION LIMIT | 1 | 0.1 | 1 | 10 | 10 |
|-----------------|---|-----|---|----|----|
|                 |   |     |   |    |    |

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.  
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

3-23-95

6701 Aberdeen Avenue

Lubbock, Texas 79424

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## TRACE ANALYSIS, INC.

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA# | FIELD CODE | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|

|        |                 |      |       |       |      |       |       |       |      |       |      |       |
|--------|-----------------|------|-------|-------|------|-------|-------|-------|------|-------|------|-------|
| T33164 | KWB - 3A        | <0.1 | <0.05 | <0.01 | 0.01 | <0.01 | <0.05 | <0.01 | 0.25 | <0.05 | <0.1 | <0.05 |
| QC     | Quality Control | 5.2  | 5.27  | 5.28  | 5.26 | 5.29  | 5.33  | 5.20  | 5.26 | 5.29  | 5.3  | 5.32  |

## DETECTION LIMIT

|     |      |      |      |      |      |      |      |      |     |      |
|-----|------|------|------|------|------|------|------|------|-----|------|
| 0.1 | 0.05 | 0.01 | 0.01 | 0.01 | 0.05 | 0.01 | 0.01 | 0.05 | 0.1 | 0.05 |
|-----|------|------|------|------|------|------|------|------|-----|------|

## % Precision

## % Extraction Accuracy

## % Instrument Accuracy

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 102 | 99  | 100 | 99  | 100 | 99  | 100 | 97  | 99  | 100 | 99  |
| 105 | 98  | 96  | 100 | 94  | 100 | 100 | 97  | 100 | 94  | 100 |
| 104 | 105 | 106 | 105 | 106 | 107 | 104 | 105 | 106 | 106 | 106 |

| T33164 | KWB - 3A | Cu<br>(mg/L) | Al<br>(mg/L) | B<br>(mg/L) | Ba<br>(mg/L) | U<br>(mg/L) | Hg<br>(mg/L) | Se<br>(mg/L) | Ag<br>(mg/L) | Pb<br>(mg/L) |
|--------|----------|--------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
|--------|----------|--------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|

## DETECTION LIMIT

|       |      |      |      |      |        |        |        |       |       |       |
|-------|------|------|------|------|--------|--------|--------|-------|-------|-------|
| <0.05 | 0.50 | 0.24 | <0.5 | <0.5 | <0.001 | <0.001 | <0.001 | 0.045 | 0.108 | 0.050 |
| 5.28  | 5.14 | 5.14 | 5.5  | 9.8  | 0.022  | 0.045  | 0.108  | 0.050 |       |       |

## % Precision

## % Extraction Accuracy

## % Instrument Accuracy

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 98  | 99  | 97  | 99  | 94  | 100 | 100 | 100 | 108 | 100 |
| 96  | 101 | 105 | 95  | 76  | 100 | 100 | 92  | 108 | 88  |
| 106 | 103 | 103 | 104 | 100 | 100 | 90  | 108 | 100 |     |

## METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33164<br>KWB-3A | Detection<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 1                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 1                  |
| Carbon disulfide          | ND               | 1                  |
| Methylene chloride        | ND               | 1                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1-Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | ND               | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |



Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33164<br>KWB-3A | Detection<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |

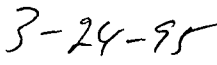
## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 106 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33164**

| EPA 625 (ppm)          | DL    | KWB-3A | QC    | %P  | %EA | %IA |
|------------------------|-------|--------|-------|-----|-----|-----|
| Naphthalene            | 0.001 | ND     | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND     | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND     | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND     | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND     | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND     | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND     | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND     | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND     | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND     | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND     | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND     | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND     | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND     | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND     | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND     | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 65  |
| Phenol-d6 SURR            | 56  |
| Nitrobenzene-d5 SURR      | 70  |
| 2-Fluorobiphenyl SURR     | 84  |
| 2,4,6-Tribromophenol SURR | 32  |
| Terphenyl-d14 SURR        | 129 |

**METHODS: EPA 625.**

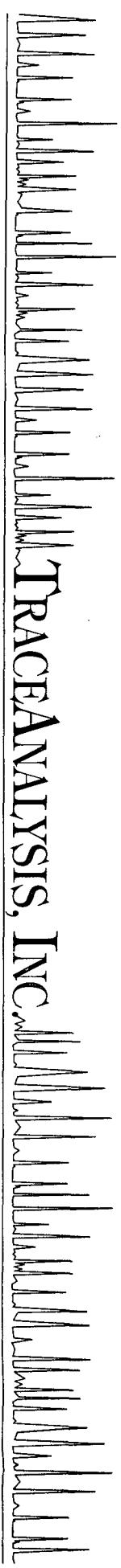
  
\_\_\_\_\_  
Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

3-24-95  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis



TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

| TA# | Field Code | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|-----|------------|---------------------|---------------------|-------------------|------------------|
|-----|------------|---------------------|---------------------|-------------------|------------------|

|        |                 |      |      |      |      |
|--------|-----------------|------|------|------|------|
| T33162 | KWB - 7         | 0.6  | 143  | 227  | 148  |
| QC     | Quality Control | 52.1 | 20.3 | 20.4 | 20.0 |

|                 |  |     |     |      |     |
|-----------------|--|-----|-----|------|-----|
| Detection Limit |  | 0.1 | 0.1 | 0.05 | 0.1 |
|-----------------|--|-----|-----|------|-----|

|                       |     |     |     |    |
|-----------------------|-----|-----|-----|----|
| % Precision           | 96  | 95  | 88  | 94 |
| % Extraction Accuracy | 117 | 109 | 138 | 92 |
| % Instrument Accuracy | 102 | 102 | 100 | 99 |

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

3-23-95

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## TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

## NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

TA# FIELD CODE

CHLORIDE  
(mg/L)FLUORIDE  
(mg/L)SULFATE  
(mg/L)ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>T33162 KWB - 7  
QC Quality Control396 1.3 952 666 0  
504 1.1 11 --- ---% Precision  
% Extraction Accuracy  
% Instrument Accuracy100 100 101 98 98  
99 109 109 --- ---  
101 106 102 --- ---

DETECTION LIMIT

1 0.1 1 10 10

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

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March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33162                | KWB - 7         | <0.1         | <0.05        | <0.01        | <0.01        | <0.01        | <0.05        | <0.01        | 0.11         | <0.05        | 2.0          | <0.05       |
| QC                    | Quality Control | 5.2          | 5.15         | 5.09         | 5.06         | 5.10         | 5.24         | 5.07         | 5.06         | 5.02         | 5.2          | 5.12        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 98           | 99           | 99           | 99           | 98           | 101          | 99           | 98           | 99           | 99           | 98          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 110          | 103          | 101          | 105          | 101          | 110          | 106          | 102          | 96           | 96           | 106         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 103          | 102          | 101          | 102          | 105          | 101          | 101          | 100          | 100          | 102         |
| Cu                    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)      |
| T33162                | KWB - 7         | <0.05        | 0.49         | 0.32         | <0.5         | <0.5         | <0.001       | <0.001       | <0.001       | <0.001       | <0.001       | <0.001      |
| QC                    | Quality Control | 5.13         | 5.18         | 5.21         | 5.1          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.05         | 0.05         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        |              |             |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 99           | 99           | 100          | 98           | 100          | 100          | 100          | 108          | 100          |              |             |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 114          | 118          | 100          | 71           | 95           | 92           | 108          | 88           |              |             |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 103          | 104          | 104          | 102          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

*[Signature]*

3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

6701 Aberdeen Avenue

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33162<br>KWB-7 | Detection<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 1                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 1                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 1                  |
| trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | ND              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33162<br>KWB-7 | Detection<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | 2               | 1                  |
| m & p-Xylene                | 1               | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 109 |
| Toluene-d8           | 98  |
| 4-Bromofluorobenzene | 100 |

\*ND = Not Detected

METHODS: EPA 624



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95

Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33162**

| <b>EPA 625 (ppm)</b>   | <b>DL</b> | <b>KWB-7</b> | <b>QC</b> | <b>%P</b> | <b>%EA</b> | <b>%IA</b> |
|------------------------|-----------|--------------|-----------|-----------|------------|------------|
| Naphthalene            | 0.001     | ND           | 0.473     |           |            | 95         |
| Acenaphthylene         | 0.001     | ND           | 0.477     |           |            | 95         |
| Acenaphthene           | 0.001     | ND           | 0.486     | 101       | 90         | 97         |
| Fluorene               | 0.001     | ND           | 0.459     |           |            | 92         |
| Phenanthrene           | 0.001     | ND           | 0.464     |           |            | 93         |
| Anthracene             | 0.001     | ND           | 0.484     |           |            | 97         |
| Fluoranthene           | 0.001     | ND           | 0.478     |           |            | 96         |
| Pyrene                 | 0.001     | ND           | 0.522     | 99        | 81         | 104        |
| Benz[a]anthracene      | 0.001     | ND           | 0.511     |           |            | 102        |
| Chrysene               | 0.001     | ND           | 0.502     |           |            | 100        |
| Benzo[b]fluoranthene   | 0.001     | ND           | 0.483     |           |            | 97         |
| Benzo[k]fluoranthene   | 0.001     | ND           | 0.477     |           |            | 95         |
| Benzo[a]pyrene         | 0.001     | ND           | 0.526     |           |            | 105        |
| Indeno[1,2,3-cd]pyrene | 0.001     | ND           | 0.433     |           |            | 87         |
| Dibenz[a,h]anthracene  | 0.001     | ND           | 0.484     |           |            | 96         |
| Benzo[g,h,i]perylene   | 0.001     | ND           | 0.481     |           |            | 96         |

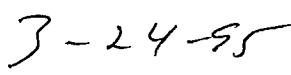
\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 73  |
| Phenol-d6 SURR            | 48  |
| Nitrobenzene-d5 SURR      | 71  |
| 2-Fluorobiphenyl SURR     | 92  |
| 2,4,6-Tribromophenol SURR | 31  |
| Terphenyl-d14 SURR        | 127 |

**METHODS: EPA 625.**

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**  
A Laboratory for Advanced Environmental Research and Analysis



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

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## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

| TA# | Field Code | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|-----|------------|---------------------|---------------------|-------------------|------------------|
|-----|------------|---------------------|---------------------|-------------------|------------------|

|        |                 |      |      |      |      |
|--------|-----------------|------|------|------|------|
| T33158 | KWB - 9         | 1.9  | 199  | 432  | 145  |
| QC     | Quality Control | 51.5 | 20.3 | 20.4 | 20.0 |

| Detection Limit |  | 0.1 | 0.1 | 0.05 | 0.1 |
|-----------------|--|-----|-----|------|-----|
|-----------------|--|-----|-----|------|-----|

|                       |     |     |     |    |
|-----------------------|-----|-----|-----|----|
| % Precision           | 96  | 95  | 88  | 94 |
| % Extraction Accuracy | 117 | 109 | 138 | 92 |
| % Instrument Accuracy | 102 | 102 | 100 | 99 |

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

3-23-95

6701 Aberdeen Avenue

Lubbock, Texas 79424

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## TRACE ANALYSIS, INC.

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

TA# FIELD CODE

CHLORIDE  
(mg/L)FLUORIDE  
(mg/L)SULFATE  
(mg/L)ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>T33158 KWB - 9  
QC Quality Control132 0.6 1,696 463 0  
504 1.1 10.0 --- ---% Precision  
% Extraction Accuracy  
% Instrument Accuracy100 100 98 98 98  
99 109 123 --- ---  
101 106 98 --- ---

DETECTION LIMIT

1 0.1 1 10 10

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date



TRACE ANALYSIS, INC.

6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/20/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33158                | KWB - 9         | <0.1         | <0.05        | <0.01        | <0.01        | <0.01        | <0.05        | <0.01        | 0.80         | <0.05        | <0.1         | <0.05       |
| QC                    | Quality Control | 5.2          | 5.15         | 5.09         | 5.06         | 5.10         | 5.24         | 5.07         | 5.06         | 5.02         | 5.2          | 5.12        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 98           | 99           | 99           | 99           | 98           | 101          | 99           | 98           | 99           | 99           | 98          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 110          | 103          | 101          | 105          | 101          | 110          | 106          | 102          | 96           | 96           | 106         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 103          | 102          | 101          | 102          | 105          | 101          | 101          | 100          | 100          | 102         |
| (mg/L)                |                 |              |              |              |              |              |              |              |              |              |              |             |
| T33158                | KWB - 9         | <0.05        | 1.10         | 0.50         | <0.5         | <0.5         | <0.001       | 0.001        | <0.001       | <0.001       | <0.001       | <0.001      |
| QC                    | Quality Control | 5.13         | 5.18         | 5.21         | 5.1          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.05         | 0.05         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        |              |             |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 99           | 99           | 100          | 98           | 100          | 100          | 100          | 108          | 100          |              |             |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 114          | 118          | 100          | 71           | 95           | 92           | 108          | 88           |              |             |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 103          | 104          | 104          | 102          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

*BS*

3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

6701 Aberdeen Avenue  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33158<br>KWB-9 | Detection<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 1                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 1                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 1                  |
| trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | 10              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |

TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33158<br>KWB-9 | Detection<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | 3               | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 108 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 100 |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-91  
Date

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33158**

| <b>EPA 625 (ppm)</b>   | <b>DL</b> | <b>KWB-9</b> | <b>QC</b> | <b>%P</b> | <b>%EA</b> | <b>%IA</b> |
|------------------------|-----------|--------------|-----------|-----------|------------|------------|
| Naphthalene            | 0.001     | ND           | 0.473     |           |            | 95         |
| Acenaphthylene         | 0.001     | ND           | 0.477     |           |            | 95         |
| Acenaphthene           | 0.001     | ND           | 0.486     | 101       | 90         | 97         |
| Fluorene               | 0.001     | ND           | 0.459     |           |            | 92         |
| Phenanthrene           | 0.001     | ND           | 0.464     |           |            | 93         |
| Anthracene             | 0.001     | ND           | 0.484     |           |            | 97         |
| Fluoranthene           | 0.001     | ND           | 0.478     |           |            | 96         |
| Pyrene                 | 0.001     | ND           | 0.522     | 99        | 81         | 104        |
| Benz[a]anthracene      | 0.001     | ND           | 0.511     |           |            | 102        |
| Chrysene               | 0.001     | ND           | 0.502     |           |            | 100        |
| Benzo[b]fluoranthene   | 0.001     | ND           | 0.483     |           |            | 97         |
| Benzo[k]fluoranthene   | 0.001     | ND           | 0.477     |           |            | 95         |
| Benzo[a]pyrene         | 0.001     | ND           | 0.526     |           |            | 105        |
| Indeno[1,2,3-cd]pyrene | 0.001     | ND           | 0.433     |           |            | 87         |
| Dibenz[a,h]anthracene  | 0.001     | ND           | 0.484     |           |            | 96         |
| Benzo[g,h,i]perylene   | 0.001     | ND           | 0.481     |           |            | 96         |

\*ND = Not Detected

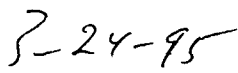
**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 65  |
| Phenol-d6 SURR            | 57  |
| Nitrobenzene-d5 SURR      | 72  |
| 2-Fluorobiphenyl SURR     | 97  |
| 2,4,6-Tribromophenol SURR | 50  |
| Terphenyl-d14 SURR        | 143 |

**METHODS: EPA 625.**

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

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FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

| TA#    | Field Code      | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|--------|-----------------|---------------------|---------------------|-------------------|------------------|
| T33163 | KWB - 11A       | 0.4                 | 168                 | 303               | 167              |
| QC     | Quality Control | 51.4                | 20.2                | 20.2              | 20.2             |

Detection Limit      0.1      0.1      0.05      0.1

% Precision      98      101      100      96  
% Extraction Accuracy      114      99      100      95  
% Instrument Accuracy      103      101      101      101

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

3-23-95

# TRACE ANALYSIS, INC.

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March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

TA# FIELD CODE

CHLORIDE  
(mg/L)

FLUORIDE  
(mg/L)

SULFATE  
(mg/L)

ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>

T33163 KWB - 11A  
QC Quality Control

|     |     |       |     |     |
|-----|-----|-------|-----|-----|
| 431 | 1.0 | 1,058 | 522 | 0   |
| 504 | 1.1 | 11    | --- | --- |

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 100 | 100 | 101 | 98  | 98  |
| 99  | 109 | 109 | --- | --- |
| 101 | 106 | 102 | --- | --- |

DETECTION LIMIT

|   |     |   |    |    |
|---|-----|---|----|----|
| 1 | 0.1 | 1 | 10 | 10 |
|---|-----|---|----|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-23-95

Date



# TRACE ANALYSIS, INC.

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March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/20/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

## TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33163                | KWB - 11A       | <0.1         | <0.05        | <0.01        | <0.01        | <0.01        | <0.05        | <0.01        | 0.08         | <0.05        | <0.1         | <0.05       |
| QC                    | Quality Control | 5.2          | 5.27         | 5.28         | 5.26         | 5.29         | 5.33         | 5.20         | 5.26         | 5.29         | 5.3          | 5.32        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 99           | 100          | 99           | 100          | 99           | 100          | 97           | 99           | 100          | 99          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 105          | 98           | 96           | 100          | 94           | 100          | 100          | 97           | 94           | 100          | 100         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 105          | 106          | 105          | 106          | 107          | 104          | 105          | 106          | 106          | 106         |

|                       | Cu<br>(mg/L)    | Al<br>(mg/L) | B<br>(mg/L) | Ba<br>(mg/L) | U<br>(mg/L) | Hg<br>(mg/L) | Se<br>(mg/L) | Ag<br>(mg/L) | Pb<br>(mg/L) |
|-----------------------|-----------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
| T33163                | KWB - 11A       | <0.05        | 0.20        | 0.36         | <0.5        | <0.5         | <0.001       | <0.001       | <0.001       |
| QC                    | Quality Control | 5.28         | 5.14        | 5.14         | 5.5         | 9.8          | 0.022        | 0.045        | 0.108        |
| DETECTION LIMIT       |                 |              |             |              |             |              |              |              |              |
|                       |                 | 0.05         | 0.05        | 0.05         | 0.5         | 0.5          | 0.001        | 0.001        | 0.001        |
| % Precision           |                 |              |             |              |             |              |              |              |              |
|                       |                 | 98           | 99          | 97           | 99          | 94           | 100          | 100          | 100          |
| % Extraction Accuracy |                 |              |             |              |             |              |              |              |              |
|                       |                 | 96           | 101         | 105          | 95          | 76           | 100          | 92           | 108          |
| % Instrument Accuracy |                 |              |             |              |             |              |              |              |              |
|                       |                 | 106          | 103         | 103          | 104         | 100          | 100          | 90           | 108          |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.  
QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95

6701 Aberdeen Avenue  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33163<br>KWB-11A | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |



TRACE ANALYSIS, INC.  
A Laboratory for Advanced Environmental Research and Analysis

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33163<br>KWB-11A | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 10                 |
| Tetrachloroethene           | ND                | 10                 |
| Chlorobenzene               | ND                | 10                 |
| Ethylbenzene                | 34                | 10                 |
| m & p-Xylene                | ND                | 10                 |
| Bromoform                   | ND                | 10                 |
| Styrene                     | ND                | 10                 |
| o-Xylene                    | ND                | 10                 |
| 1,1,2,2-Tetrachloroethane   | ND                | 10                 |
| trans 1,4-Dichloro-2-butene | ND                | 50                 |
| cis 1,4-Dichloro-2-butene   | ND                | 50                 |
| 1,4-Dichlorobenzene         | ND                | 20                 |
| 1,3-Dichlorobenzene         | ND                | 20                 |
| 1,2-Dichlorobenzene         | ND                | 20                 |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 109 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 101 |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33163**

| <b>EPA 625 (ppm)</b>   | <b>DL</b> | <b>KWB-11A</b> | <b>QC</b> | <b>%P</b> | <b>%EA</b> | <b>%IA</b> |
|------------------------|-----------|----------------|-----------|-----------|------------|------------|
| Naphthalene            | 0.001     | ND             | 0.473     |           |            | 95         |
| Acenaphthylene         | 0.001     | ND             | 0.477     |           |            | 95         |
| Acenaphthene           | 0.001     | ND             | 0.486     | 101       | 90         | 97         |
| Fluorene               | 0.001     | ND             | 0.459     |           |            | 92         |
| Phenanthrene           | 0.001     | ND             | 0.464     |           |            | 93         |
| Anthracene             | 0.001     | ND             | 0.484     |           |            | 97         |
| Fluoranthene           | 0.001     | ND             | 0.478     |           |            | 96         |
| Pyrene                 | 0.001     | ND             | 0.522     | 99        | 81         | 104        |
| Benz[a]anthracene      | 0.001     | ND             | 0.511     |           |            | 102        |
| Chrysene               | 0.001     | ND             | 0.502     |           |            | 100        |
| Benzo[b]fluoranthene   | 0.001     | ND             | 0.483     |           |            | 97         |
| Benzo[k]fluoranthene   | 0.001     | ND             | 0.477     |           |            | 95         |
| Benzo[a]pyrene         | 0.001     | ND             | 0.526     |           |            | 105        |
| Indeno[1,2,3-cd]pyrene | 0.001     | ND             | 0.433     |           |            | 87         |
| Dibenz[a,h]anthracene  | 0.001     | ND             | 0.484     |           |            | 96         |
| Benzo[g,h,i]perylene   | 0.001     | ND             | 0.481     |           |            | 96         |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 73  |
| Phenol-d6 SURR            | 48  |
| Nitrobenzene-d5 SURR      | 71  |
| 2-Fluorobiphenyl SURR     | 92  |
| 2,4,6-Tribromophenol SURR | 31  |
| Terphenyl-d14 SURR        | 127 |

**METHODS: EPA 625.**



Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

3-24-95

DATE

**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis

6701 Aberdeen Avenue

Lubbock, Texas 79424

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR NAVAJO REFINING

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/21/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

| TA#    | Field Code      | POTASSIUM<br>(mg/L) | MAGNESIUM<br>(mg/L) | CALCIUM<br>(mg/L) | SODIUM<br>(mg/L) |
|--------|-----------------|---------------------|---------------------|-------------------|------------------|
| T33160 | KWB - 12A       | 2.5                 | 197                 | 485               | 224              |
| QC     | Quality Control | 52.1                | 20.3                | 20.4              | 20.0             |

Detection Limit                      0.1                      0.1                      0.05                      0.1

|                       |     |     |     |    |
|-----------------------|-----|-----|-----|----|
| % Precision           | 96  | 95  | 88  | 94 |
| % Extraction Accuracy | 117 | 109 | 138 | 92 |
| % Instrument Accuracy | 102 | 102 | 100 | 99 |

### METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

3-23-95

6701 Aberdeen Avenue

Lubbock, Texas 79424

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## TRACE ANALYSIS, INC.

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

TA# FIELD CODE

CHLORIDE  
(mg/L)FLUORIDE  
(mg/L)SULFATE  
(mg/L)ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>T33160 KWB - 12A  
QC Quality Control

|     |     |       |     |     |
|-----|-----|-------|-----|-----|
| 122 | 0.8 | 3,046 | 343 | 0   |
| 504 | 1.1 | 10.0  | --- | --- |

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 100 | 100 | 98  | 98  | 98  |
| 99  | 109 | 123 | --- | --- |
| 101 | 106 | 98  | --- | --- |

DETECTION LIMIT

|   |     |   |    |    |
|---|-----|---|----|----|
| 1 | 0.1 | 1 | 10 | 10 |
|---|-----|---|----|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

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March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA# | FIELD CODE | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
|-----|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|

|        |                 |      |       |       |      |       |       |       |      |       |     |       |
|--------|-----------------|------|-------|-------|------|-------|-------|-------|------|-------|-----|-------|
| T33160 | KWB - 12A       | <0.1 | <0.05 | <0.01 | 0.02 | <0.01 | <0.05 | <0.01 | 1.41 | <0.05 | 0.4 | <0.05 |
| QC     | Quality Control | 5.2  | 5.15  | 5.09  | 5.06 | 5.10  | 5.24  | 5.07  | 5.06 | 5.02  | 5.2 | 5.12  |

## DETECTION LIMIT

|     |      |      |      |      |      |      |      |      |     |      |
|-----|------|------|------|------|------|------|------|------|-----|------|
| 0.1 | 0.05 | 0.01 | 0.01 | 0.01 | 0.05 | 0.01 | 0.01 | 0.05 | 0.1 | 0.05 |
|-----|------|------|------|------|------|------|------|------|-----|------|

|                       |     |     |     |     |     |     |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           | 98  | 99  | 99  | 99  | 98  | 101 | 99  | 98  | 99  | 99  | 98  |
| % Extraction Accuracy | 110 | 103 | 101 | 105 | 101 | 110 | 106 | 102 | 96  | 96  | 106 |
| % Instrument Accuracy | 104 | 103 | 102 | 101 | 102 | 105 | 101 | 101 | 100 | 100 | 102 |

|        | Cu<br>(mg/L)    | Al<br>(mg/L) | B<br>(mg/L) | Ba<br>(mg/L) | U<br>(mg/L) | Hg<br>(mg/L) | Se<br>(mg/L) | Ag<br>(mg/L) | Pb<br>(mg/L) |
|--------|-----------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
| T33160 | KWB - 12A       | <0.05        | 2.91        | 0.25         | <0.5        | <0.5         | <0.001       | 0.001        | <0.001       |
| QC     | Quality Control | 5.13         | 5.18        | 5.21         | 5.1         | 9.8          | 0.022        | 0.045        | 0.108        |

## DETECTION LIMIT

|      |      |      |     |     |       |       |       |       |
|------|------|------|-----|-----|-------|-------|-------|-------|
| 0.05 | 0.05 | 0.05 | 0.5 | 0.5 | 0.001 | 0.001 | 0.001 | 0.001 |
|------|------|------|-----|-----|-------|-------|-------|-------|

|                       |     |     |     |     |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           | 99  | 99  | 100 | 98  | 100 | 100 | 100 | 108 | 100 |
| % Extraction Accuracy | 102 | 114 | 118 | 100 | 71  | 95  | 92  | 108 | 88  |
| % Instrument Accuracy | 103 | 104 | 104 | 102 | 100 | 100 | 90  | 108 | 100 |

## METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33160<br>KWB-12A | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | 1                 | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

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Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33160<br>KWB-12A | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | 2                 | 1                  |
| m & p-Xylene                | 2                 | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

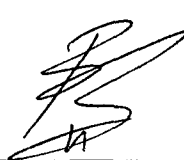
## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 109 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 101 |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33160**

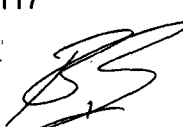
| EPA 625 (ppm)          | DL    | KWB-12A | QC    | %P  | %EA | %IA |
|------------------------|-------|---------|-------|-----|-----|-----|
| Naphthalene            | 0.001 | ND      | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND      | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND      | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND      | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND      | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND      | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND      | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND      | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND      | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND      | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND      | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND      | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND      | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND      | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND      | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND      | 0.481 |     |     | 96  |

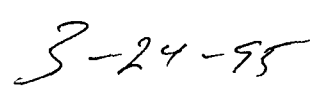
\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 67  |
| Phenol-d6 SURR            | 53  |
| Nitrobenzene-d5 SURR      | 78  |
| 2-Fluorobiphenyl SURR     | 97  |
| 2,4,6-Tribromophenol SURR | 46  |
| Terphenyl-d14 SURR        | 117 |

**METHODS: EPA 625.**

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

  
\_\_\_\_\_  
DATE

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33153<br>RA-2723 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33153<br>RA-2723 | Detection<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethene           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 107 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 100 |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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# TRACE ANALYSIS, INC.

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

TA# Field Code

POTASSIUM  
(mg/L)

MAGNESIUM  
(mg/L)

CALCIUM  
(mg/L)

SODIUM  
(mg/L)

T33149 MW - 18  
QC Quality Control

1.8  
51.5

186  
20.3

302  
20.4

58.9  
20.0

Detection Limit

0.1

0.1

0.05

0.1

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

96  
117  
102

95  
109  
102

88  
138  
100

94  
92  
99

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

3-23-95

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## TRACE ANALYSIS, INC.

ANALYTICAL RESULTS FOR  
NAVAJO REFINING

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/15/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

| TA#    | FIELD CODE      | ALKALINITY         |                    |                   |                                                                  |
|--------|-----------------|--------------------|--------------------|-------------------|------------------------------------------------------------------|
|        |                 | CHLORIDE<br>(mg/L) | FLUORIDE<br>(mg/L) | SULFATE<br>(mg/L) | (mg/L as CaCO <sub>3</sub> )<br>HCO <sub>3</sub> CO <sub>3</sub> |
| T33149 | MW - 18         | 225                | 1.2                | 1,145             | 492 0                                                            |
| QC     | Quality Control | 504                | 1.1                | 10.0              | --- ---                                                          |

% Precision  
% Extraction Accuracy  
% Instrument Accuracy

|     |     |         |
|-----|-----|---------|
| 100 | 100 | 98      |
| 99  | 109 | 123     |
| 101 | 106 | 98      |
|     |     | --- --- |

DETECTION LIMIT

|   |     |   |    |    |
|---|-----|---|----|----|
| 1 | 0.1 | 1 | 10 | 10 |
|---|-----|---|----|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.  
QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

3-23-95



# TRACE ANALYSIS, INC.

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March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/20/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

## TOTAL METALS

| TA# | FIELD CODE | As (mg/L) | Mo (mg/L) | Cr (mg/L) | Zn (mg/L) | Cd (mg/L) | Ni (mg/L) | Be (mg/L) | Fe (mg/L) | Co (mg/L) | Mn (mg/L) | V (mg/L) |
|-----|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
|-----|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|

|        |                 |      |       |       |      |       |       |       |      |       |      |       |
|--------|-----------------|------|-------|-------|------|-------|-------|-------|------|-------|------|-------|
| T33149 | MW - 18         | <0.1 | <0.05 | <0.01 | 0.02 | <0.01 | <0.05 | <0.01 | 0.20 | <0.05 | <0.1 | <0.05 |
| QC     | Quality Control | 5.2  | 5.15  | 5.09  | 5.06 | 5.10  | 5.24  | 5.07  | 5.06 | 5.02  | 5.2  | 5.12  |

DETECTION LIMIT 0.1 0.05 0.01 0.01 0.01 0.05 0.01 0.01 0.05 0.01 0.05 0.1 0.05

|                       |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           | 98  | 99  | 99  | 99  | 98  | 101 | 101 | 99  | 98  | 99  | 98  | 98  |
| % Extraction Accuracy | 110 | 103 | 101 | 105 | 101 | 110 | 106 | 102 | 96  | 106 | 106 | 106 |
| % Instrument Accuracy | 104 | 103 | 102 | 101 | 102 | 105 | 101 | 101 | 101 | 100 | 102 | 102 |

|                    | Cu (mg/L) | Al (mg/L) | B (mg/L) | Ba (mg/L) | U (mg/L) | Hg (mg/L) | Se (mg/L) | Ag (mg/L) | Pb (mg/L) |
|--------------------|-----------|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|
| T33149 MW - 18     | <0.05     | 0.36      | 0.63     | <0.5      | <0.5     | <0.001    | 0.001     | <0.001    | <0.001    |
| QC Quality Control | 5.13      | 5.18      | 5.21     | 5.1       | 9.8      | 0.022     | 0.045     | 0.108     | 0.050     |

DETECTION LIMIT 0.05 0.08 0.05 0.5 0.5 0.001 0.001 0.001 0.001 0.001

|                       |     |     |     |     |     |     |     |     |     |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| % Precision           | 99  | 99  | 100 | 98  | 100 | 100 | 100 | 108 | 100 |
| % Extraction Accuracy | 102 | 114 | 118 | 100 | 71  | 95  | 92  | 108 | 88  |
| % Instrument Accuracy | 103 | 104 | 104 | 102 | 100 | 100 | 90  | 108 | 100 |

## METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

DATE

3-23-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33149<br>MW - 18 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 1                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 1                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 1                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |



Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33149<br>MW-18 | Detection<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | ND              | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 103 |
| Toluene-d8           | 98  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

**T33149**

| <b>EPA 625 (ppm)</b>   | <b>DL</b> | <b>MW-18</b> | <b>QC</b> | <b>%P</b> | <b>%EA</b> | <b>%IA</b> |
|------------------------|-----------|--------------|-----------|-----------|------------|------------|
| Naphthalene            | 0.001     | ND           | 0.473     |           |            | 95         |
| Acenaphthylene         | 0.001     | ND           | 0.477     |           |            | 95         |
| Acenaphthene           | 0.001     | ND           | 0.486     | 101       | 90         | 97         |
| Fluorene               | 0.001     | ND           | 0.459     |           |            | 92         |
| Phenanthrene           | 0.001     | ND           | 0.464     |           |            | 93         |
| Anthracene             | 0.001     | ND           | 0.484     |           |            | 97         |
| Fluoranthene           | 0.001     | ND           | 0.478     |           |            | 96         |
| Pyrene                 | 0.001     | ND           | 0.522     | 99        | 81         | 104        |
| Benz[a]anthracene      | 0.001     | ND           | 0.511     |           |            | 102        |
| Chrysene               | 0.001     | ND           | 0.502     |           |            | 100        |
| Benzo[b]fluoranthene   | 0.001     | ND           | 0.483     |           |            | 97         |
| Benzo[k]fluoranthene   | 0.001     | ND           | 0.477     |           |            | 95         |
| Benzo[a]pyrene         | 0.001     | ND           | 0.526     |           |            | 105        |
| Indeno[1,2,3-cd]pyrene | 0.001     | ND           | 0.433     |           |            | 87         |
| Dibenz[a,h]anthracene  | 0.001     | ND           | 0.484     |           |            | 96         |
| Benzo[g,h,i]perylene   | 0.001     | ND           | 0.481     |           |            | 96         |

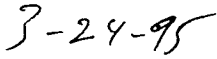
\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 56  |
| Phenol-d6 SURR            | 42  |
| Nitrobenzene-d5 SURR      | 65  |
| 2-Fluorobiphenyl SURR     | 88  |
| 2,4,6-Tribromophenol SURR | 43  |
| Terphenyl-d14 SURR        | 148 |

**METHODS: EPA 625.**

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## TRACE ANALYSIS, INC.

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/20/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

## TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33151                | MW - 28         | <0.1         | <0.05        | <0.01        | 0.04         | 0.01         | <0.05        | <0.01        | 0.21         | <0.05        | <0.1         | <0.05       |
| QC                    | Quality Control | 5.2          | 5.15         | 5.09         | 5.06         | 5.10         | 5.24         | 5.07         | 5.06         | 5.02         | 5.2          | 5.12        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 98           | 99           | 99           | 99           | 98           | 101          | 99           | 98           | 99           | 99           | 98          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 110          | 103          | 101          | 105          | 101          | 110          | 106          | 102          | 96           | 96           | 106         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 103          | 102          | 101          | 102          | 105          | 101          | 101          | 100          | 100          | 102         |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 99           | 99           | 100          | 98           | 100          | 100          | 100          | 108          | 100          | 100          | 100         |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 114          | 118          | 100          | 71           | 95           | 92           | 108          | 88           | 88           | 88          |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 103          | 104          | 104          | 102          | 100          | 100          | 90           | 108          | 100          | 100          | 100         |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33151<br>MW - 28 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 50                 |
| Chloromethane             | ND                | 50                 |
| Vinyl chloride            | ND                | 50                 |
| Bromomethane              | ND                | 50                 |
| Chloroethane              | ND                | 50                 |
| Trichlorofluoromethane    | ND                | 50                 |
| 1,1-Dichloroethene        | ND                | 50                 |
| Iodomethane               | ND                | 50                 |
| Carbon disulfide          | ND                | 50                 |
| Methylene chloride        | ND                | 50                 |
| trans-1,2-Dichloroethene  | ND                | 50                 |
| 1,1-Dichloroethane        | ND                | 50                 |
| Vinyl acetate             | ND                | 50                 |
| 2-Butanone                | ND                | 2,500              |
| Chloroform                | ND                | 50                 |
| 1,1,1-Trichloroethane     | ND                | 50                 |
| 1,2-Dichloroethane        | ND                | 50                 |
| Benzene                   | 983               | 50                 |
| Carbon Tetrachloride      | ND                | 50                 |
| 1,2-Dichloropropane       | ND                | 50                 |
| Trichloroethene           | ND                | 50                 |
| Bromodichloromethane      | ND                | 50                 |
| cis-1,3-Dichloropropene   | ND                | 50                 |
| 4-Methyl-2-pentanone      | ND                | 2,500              |
| trans-1,3-Dichloropropene | ND                | 50                 |
| Toluene                   | 613               | 50                 |
| 1,1,2-Trichloroethane     | ND                | 50                 |
| 2-Hexanone                | ND                | 2,500              |

TRACE ANALYSIS, INC.

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

| PAH's                  |       | T33151 |       |     |     |     |
|------------------------|-------|--------|-------|-----|-----|-----|
| EPA 625 (ppm)          | DL    | MW-28  | QC    | %P  | %EA | %IA |
| Naphthalene            | 0.001 | 0.076  | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND     | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND     | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND     | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND     | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND     | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND     | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND     | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND     | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND     | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND     | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND     | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND     | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND     | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND     | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND     | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 53  |
| Phenol-d6 SURR            | 51  |
| Nitrobenzene-d5 SURR      | 86  |
| 2-Fluorobiphenyl SURR     | 86  |
| 2,4,6-Tribromophenol SURR | 92  |
| Terphenyl-d14 SURR        | 128 |

METHODS: EPA 625.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95  
DATE

**TRACE ANALYSIS, INC.**

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/21/95

Sampling Date: 03/09/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

TA# Field Code

POTASSIUM  
(mg/L)

MAGNESIUM  
(mg/L)

CALCIUM  
(mg/L)

SODIUM  
(mg/L)

T33150 MW - 29

QC Quality Control

3.6  
51.0

262  
20.4

405  
20.0

261  
19.8

Detection Limit

0.1

0.1

0.05

0.1

% Precision

96

95

88

94

% Extraction Accuracy

117

109

138

92

% Instrument Accuracy

102

102

100

99

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.



3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

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## TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/09/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

TA# FIELD CODE

CHLORIDE  
(mg/L)FLUORIDE  
(mg/L)SULFATE  
(mg/L)ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>

|        |                 |     |     |       |     |     |
|--------|-----------------|-----|-----|-------|-----|-----|
| T33150 | MW - 29         | 362 | 2.6 | 1,836 | 695 | 0   |
| QC     | Quality Control | 504 | 1.1 | 10.0  | --- | --- |

|                       |     |     |     |     |
|-----------------------|-----|-----|-----|-----|
| % Precision           | 100 | 100 | 98  | 98  |
| % Extraction Accuracy | 99  | 109 | 123 | --- |
| % Instrument Accuracy | 101 | 106 | 98  | --- |

|                 |   |     |   |    |    |
|-----------------|---|-----|---|----|----|
| DETECTION LIMIT | 1 | 0.1 | 1 | 10 | 10 |
|-----------------|---|-----|---|----|----|

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

3-23-95

# TRACE ANALYSIS, INC.

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Lubbock, Texas 79424

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March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/20/95  
Sampling Date: 03/09/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

## TOTAL METALS

| TA#                      | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|--------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33150                   | MW - 29         | <0.1         | <0.05        | <0.01        | 0.06         | <0.01        | <0.05        | <0.01        | 0.73         | <0.05        | 1.1          | <0.05       |
| QC                       | Quality Control | 5.2          | 5.15         | 5.09         | 5.06         | 5.10         | 5.24         | 5.07         | 5.06         | 5.02         | 5.2          | 5.12        |
| DETECTION LIMIT          |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision              |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 98           | 99           | 99           | 99           | 98           | 101          | 99           | 98           | 99           | 98           | 98          |
| % Extraction Accuracy    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 110          | 103          | 101          | 105          | 101          | 110          | 106          | 102          | 96           | 100          | 106         |
| % Instrument Accuracy    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 104          | 103          | 102          | 101          | 102          | 105          | 101          | 101          | 100          | 104          | 102         |
| Cu Al B Ba U Hg Se Ag Pb |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)      |
| T33150                   | MW - 29         | <0.05        | 0.14         | 0.73         | <0.5         | <0.5         | <0.001       | <0.001       | <0.001       | <0.001       | <0.001       | <0.001      |
| QC                       | Quality Control | 5.13         | 5.18         | 5.21         | 5.1          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
| DETECTION LIMIT          |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 0.05         | 0.08         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        | 0.001        |             |
| % Precision              |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 99           | 99           | 100          | 98           | 100          | 100          | 100          | 108          | 100          |              |             |
| % Extraction Accuracy    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 102          | 114          | 118          | 100          | 71           | 95           | 92           | 108          | 88           |              |             |
| % Instrument Accuracy    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                          |                 | 103          | 104          | 104          | 102          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

3-23-95



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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33150<br>MW - 29 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 400                |
| Chloromethane             | ND                | 400                |
| Vinyl chloride            | ND                | 400                |
| Bromomethane              | ND                | 400                |
| Chloroethane              | ND                | 400                |
| Trichlorofluoromethane    | ND                | 400                |
| 1,1-Dichloroethene        | ND                | 400                |
| Iodomethane               | ND                | 400                |
| Carbon disulfide          | ND                | 400                |
| Methylene chloride        | ND                | 400                |
| trans-1,2-Dichloroethene  | ND                | 400                |
| 1,1-Dichloroethane        | ND                | 400                |
| Vinyl acetate             | ND                | 400                |
| 2-Butanone                | ND                | 20,000             |
| Chloroform                | ND                | 400                |
| 1,1,1-Trichloroethane     | ND                | 400                |
| 1,2-Dichloroethane        | ND                | 400                |
| Benzene                   | ND                | 400                |
| Carbon Tetrachloride      | ND                | 400                |
| 1,2-Dichloropropane       | ND                | 400                |
| Trichloroethene           | ND                | 400                |
| Bromodichloromethane      | ND                | 400                |
| cis-1,3-Dichloropropene   | ND                | 400                |
| 4-Methyl-2-pentanone      | ND                | 20,000             |
| trans-1,3-Dichloropropene | ND                | 400                |
| Toluene                   | ND                | 400                |
| 1,1,2-Trichloroethane     | ND                | 400                |
| 2-Hexanone                | ND                | 20,000             |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33150<br>MW-29 | Detection<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 400                |
| Tetrachloroethene           | ND              | 400                |
| Chlorobenzene               | ND              | 400                |
| Ethylbenzene                | ND              | 400                |
| m & p-Xylene                | ND              | 400                |
| Bromoform                   | ND              | 400                |
| Styrene                     | ND              | 400                |
| o-Xylene                    | ND              | 400                |
| 1,1,2,2-Tetrachloroethane   | ND              | 400                |
| trans 1,4-Dichloro-2-butene | ND              | 2,000              |
| cis 1,4-Dichloro-2-butene   | ND              | 2,000              |
| 1,4-Dichlorobenzene         | ND              | 800                |
| 1,3-Dichlorobenzene         | ND              | 800                |
| 1,2-Dichlorobenzene         | ND              | 800                |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 105 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell3-24-95  
\_\_\_\_\_  
Date

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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

T33150

| EPA 625 (ppm)          | DL    | MW-29 | QC    | %P  | %EA | %IA |
|------------------------|-------|-------|-------|-----|-----|-----|
| Naphthalene            | 0.001 | 0.103 | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND    | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | 0.005 | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | 0.023 | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | 0.003 | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | 0.037 | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | 0.002 | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | 0.008 | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND    | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND    | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND    | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND    | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND    | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND    | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND    | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND    | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 85  |
| Phenol-d6 SURR            | 50  |
| Nitrobenzene-d5 SURR      | 80  |
| 2-Fluorobiphenyl SURR     | 89  |
| 2,4,6-Tribromophenol SURR | 61  |
| Terphenyl-d14 SURR        | 128 |

METHODS: EPA 625.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

*3-24-95*  
\_\_\_\_\_  
DATE

6701 Aberdeen Avenue

Lubbock, Texas 79424

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# TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Analysis Date: 03/21/95

Sampling Date: 03/10/95

Sample Condition: Intact & Cool

Sample Received by: CC

Project Name: NA

TA# Field Code

POTASSIUM  
(mg/L)

MAGNESIUM  
(mg/L)

CALCIUM  
(mg/L)

SODIUM  
(mg/L)

T33169

MW - 45

14.6

443

612

541

QC Quality Control

51.4

20.2

20.2

20.2

Detection Limit

0.1

0.1

0.05

0.1

% Precision

98

101

100

96

% Extraction Accuracy

114

99

100

95

% Instrument Accuracy

103

101

101

101

METHODS: EPA 200.7.

QC: Blank Spiked with 50.0 mg/L POTASSIUM; 20.0 mg/L MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

Date

3-23-95

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## TRACE ANALYSIS, INC.

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Analysis Date: 03/15/95

Sampling Date: 03/10/95

Sample Condition: Intact &amp; Cool

Sample Received by: CC

Project Name: NA

March 23, 1995

Receiving Date: 03/11/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

TA# FIELD CODE

CHLORIDE  
(mg/L)FLUORIDE  
(mg/L)SULFATE  
(mg/L)ALKALINITY  
(mg/L as CaCO<sub>3</sub>)  
HCO<sub>3</sub> CO<sub>3</sub>T33169 MW - 45  
QC Quality Control1,057  
5042.3  
1.043,197  
11283  
---0  
---% Precision  
% Extraction Accuracy  
% Instrument Accuracy99  
98  
101109  
114  
102101  
109  
102104  
---104  
---

DETECTION LIMIT

1

0.1

1

10

10

METHODS: EPA 375.4, 310.1, 340.2; 4500 Cl-B.

QC: Blank Spiked with 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 10.0 mg/L SULFATE.

3-23-95

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

March 23, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

Analysis Date: 03/20/95  
Sampling Date: 03/00/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: NA

## TOTAL METALS

| TA#                   | FIELD CODE      | As<br>(mg/L) | Mo<br>(mg/L) | Cr<br>(mg/L) | Zn<br>(mg/L) | Cd<br>(mg/L) | Ni<br>(mg/L) | Be<br>(mg/L) | Fe<br>(mg/L) | Co<br>(mg/L) | Mn<br>(mg/L) | V<br>(mg/L) |
|-----------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| T33169                | MW - 45         | <0.1         | <0.05        | <0.01        | 0.02         | <0.01        | <0.05        | <0.01        | 2.56         | <0.05        | 0.4          | <0.05       |
| QC                    | Quality Control | 5.2          | 5.27         | 5.28         | 5.26         | 5.29         | 5.33         | 5.20         | 5.26         | 5.29         | 5.3          | 5.32        |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.1          | 0.05         | 0.01         | 0.01         | 0.01         | 0.05         | 0.01         | 0.01         | 0.05         | 0.1          | 0.05        |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 102          | 99           | 100          | 99           | 100          | 99           | 100          | 97           | 99           | 100          | 99          |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 105          | 98           | 96           | 100          | 94           | 100          | 100          | 97           | 94           | 100          | 100         |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 104          | 105          | 106          | 105          | 106          | 107          | 104          | 105          | 106          | 106          | 106         |
| Cu                    |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)       | (mg/L)      |
| T33169                | MW - 45         | <0.05        | 1.55         | 0.29         | 0.5          | <0.5         | <0.001       | <0.001       | <0.001       | <0.001       | 0.005        |             |
| QC                    | Quality Control | 5.28         | 5.14         | 5.14         | 5.5          | 9.8          | 0.022        | 0.045        | 0.108        | 0.050        |              |             |
| DETECTION LIMIT       |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 0.05         | 0.05         | 0.05         | 0.5          | 0.5          | 0.001        | 0.001        | 0.001        | 0.001        |              |             |
| % Precision           |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 98           | 99           | 97           | 99           | 94           | 100          | 100          | 108          | 100          |              |             |
| % Extraction Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 96           | 101          | 105          | 95           | 76           | 100          | 92           | 108          | 88           |              |             |
| % Instrument Accuracy |                 |              |              |              |              |              |              |              |              |              |              |             |
|                       |                 | 106          | 103          | 103          | 104          | 100          | 100          | 90           | 108          | 100          |              |             |

METHODS: EPA 200.7, 239.2, 270.2, 272.2.

QC: Blank Spiked with 0.050 mg/L Se, Pb; 0.100 mg/L Ag; 5.0 mg/L As, Mn, Cu; 5.00 mg/L Mo, Cr, Zn, Cd, Ni, Be, Fe, Co, V, Al, B; 200 mg/L Ba; 9.8 mg/L U; 0.022 mg/L Hg.

*BS*

*3-23-95*

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

DATE

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 03/18/95  
Sampling Date: 03/9-10/95  
Sample Condition: Intact & Cool  
Sample Received by: CC  
Project Name: Navajo

| EPA 624 Compounds (ppb)   | T33169<br>MW-45 | Detection<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 2                  |
| Chloromethane             | ND              | 2                  |
| Vinyl chloride            | ND              | 2                  |
| Bromomethane              | ND              | 2                  |
| Chloroethane              | ND              | 2                  |
| Trichlorofluoromethane    | ND              | 2                  |
| 1,1-Dichloroethene        | ND              | 2                  |
| Iodomethane               | ND              | 2                  |
| Carbon disulfide          | ND              | 2                  |
| Methylene chloride        | ND              | 2                  |
| trans-1,2-Dichloroethene  | ND              | 2                  |
| 1,1-Dichloroethane        | ND              | 2                  |
| Vinyl acetate             | ND              | 2                  |
| 2-Butanone                | ND              | 100                |
| Chloroform                | ND              | 2                  |
| 1,1,1-Trichloroethane     | ND              | 2                  |
| 1,2-Dichloroethane        | ND              | 2                  |
| Benzene                   | ND              | 2                  |
| Carbon Tetrachloride      | ND              | 2                  |
| 1,2-Dichloropropane       | ND              | 2                  |
| Trichloroethene           | ND              | 2                  |
| Bromodichloromethane      | ND              | 2                  |
| cis-1,3-Dichloropropene   | ND              | 2                  |
| 4-Methyl-2-pentanone      | ND              | 100                |
| trans-1,3-Dichloropropene | ND              | 2                  |
| Toluene                   | ND              | 2                  |
| 1,1,2-Trichloroethane     | ND              | 2                  |
| 2-Hexanone                | ND              | 100                |

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb)  | T33169<br>MW-45 | Detection<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 2                  |
| Tetrachloroethene           | ND              | 2                  |
| Chlorobenzene               | ND              | 2                  |
| Ethylbenzene                | ND              | 2                  |
| m & p-Xylene                | ND              | 2                  |
| Bromoform                   | ND              | 2                  |
| Styrene                     | ND              | 2                  |
| o-Xylene                    | ND              | 2                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 2                  |
| trans 1,4-Dichloro-2-butene | ND              | 10                 |
| cis 1,4-Dichloro-2-butene   | ND              | 10                 |
| 1,4-Dichlorobenzene         | ND              | 4                  |
| 1,3-Dichlorobenzene         | ND              | 4                  |
| 1,2-Dichlorobenzene         | ND              | 4                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 105 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

3-24-95

Date



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**ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210**

March 24, 1995  
Receiving Date: 03/11/95  
Sample Type: Water  
Sample Condition: I & C  
Sample Received by: CC  
Project No: NA  
Project Name: Navajo  
Project Location: Artesia, NM  
Analysis Date: 03/20/95

**PAH's**

T33169

| EPA 625 (ppm)          | DL    | MW-45 | QC    | %P  | %EA | %IA |
|------------------------|-------|-------|-------|-----|-----|-----|
| Naphthalene            | 0.001 | ND    | 0.473 |     |     | 95  |
| Acenaphthylene         | 0.001 | ND    | 0.477 |     |     | 95  |
| Acenaphthene           | 0.001 | ND    | 0.486 | 101 | 90  | 97  |
| Fluorene               | 0.001 | ND    | 0.459 |     |     | 92  |
| Phenanthrene           | 0.001 | ND    | 0.464 |     |     | 93  |
| Anthracene             | 0.001 | ND    | 0.484 |     |     | 97  |
| Fluoranthene           | 0.001 | ND    | 0.478 |     |     | 96  |
| Pyrene                 | 0.001 | ND    | 0.522 | 99  | 81  | 104 |
| Benz[a]anthracene      | 0.001 | ND    | 0.511 |     |     | 102 |
| Chrysene               | 0.001 | ND    | 0.502 |     |     | 100 |
| Benzo[b]fluoranthene   | 0.001 | ND    | 0.483 |     |     | 97  |
| Benzo[k]fluoranthene   | 0.001 | ND    | 0.477 |     |     | 95  |
| Benzo[a]pyrene         | 0.001 | ND    | 0.526 |     |     | 105 |
| Indeno[1,2,3-cd]pyrene | 0.001 | ND    | 0.433 |     |     | 87  |
| Dibenz[a,h]anthracene  | 0.001 | ND    | 0.484 |     |     | 96  |
| Benzo[g,h,i]perylene   | 0.001 | ND    | 0.481 |     |     | 96  |

\*ND = Not Detected

**% RECOVERY**

|                           |     |
|---------------------------|-----|
| 2-Fluorophenol SURR       | 76  |
| Phenol-d6 SURR            | 65  |
| Nitrobenzene-d5 SURR      | 93  |
| 2-Fluorobiphenyl SURR     | 103 |
| 2,4,6-Tribromophenol SURR | 59  |
| Terphenyl-d14 SURR        | 152 |

METHODS: EPA 625.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

3-24-95  
\_\_\_\_\_  
DATE

  
**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis







TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

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

July 19, 1995

OIL CONSERVATION DIVISION  
RECEIVED FAX  
55 JUL 26 10 28 AM '95  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P/L

Mr Bill Olson  
Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

**RE:2nd QUARTER 1995 INVESTIGATIVE REPORT - GROUND WATER REMEDIATION,  
NAVAJO REFINING CO., EDDY COUNTY, NM**

Dear Bill,

Enclosed, please find 1) Ground Water potentiometric map, 2) Product thickness map, and 3) analysis of the wells done this quarter. We continue to detect small amounts of MTBE in RA-1227. Also, KWB-7 which is in the middle of the Chase orchard had a small hit of MTBE on the quarterly sampling.

We continue to have problems getting accurate numbers on the amount of water produced from each recovery well. We have tried several different types of meters, but these products just won't last under this service. We are looking into using a timer to determine how long each pump runs, and then calculating what it would pump in that time. The amount of product pumped this quarter from each well is as follows:

|             |                  |
|-------------|------------------|
| RW-1        | 25070.9 GALLONS  |
| RW-2        | 2142.84 GALLONS  |
| RW-5        | 7055.41 GALLONS  |
| RW-7        | 95.58 GALLONS    |
| RW-8        | 2043.39 GALLONS  |
| RW-9        | 2024.73 GALLONS  |
| RW-10       | 15491.89 GALLONS |
| BOLTON RD-1 | 0.46 GALLONS     |
| BOLTON RD-2 | 219.78 GALLONS   |
| BOLTON RD-3 | 26934.20 GALLONS |
| BOLTON RD-4 | 4122.02 GALLONS  |

This comes to a total of 85,201.2 gallons pumped plant wide this quarter. These totals are from April 1, 1995 to June 30, 1995.

If there are any questions concerning this report, please call me at 505-748-3311. Thank you for your time in this matter.

Regards,  
NAVAJO REFINING CO

Darrell Moore  
Sr. Environmental Specialist  
Encl.

[illegible]



[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

**KWB-12A**

[illegible]

[illegible]



[illegible]

[illegible]



RA-2723

[illegible]

RA-4798

| DATE SAMPLED                   | 01/26/95           | 02/10/95 | 02/22/95 | 03/09/95 | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|--------------------|----------|----------|----------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) |                    |          |          |          |          |          |          |
|                                | m, p, & o xylene   | 3        |          |          |          |          |          |
|                                | Carbon Disulfide   |          |          | 6        |          |          |          |
|                                | 1,2-Dichloroethane |          |          |          | 3        | 3        |          |
|                                |                    |          |          |          |          |          |          |
|                                |                    |          |          |          |          |          |          |
|                                |                    |          |          |          |          |          |          |

RA-313 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                   | 03/10/95 | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|----------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |

RA-314 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                                             | 03/10/95 | 04/21/95 | 05/22/95 | 06/28/95 |
|----------------------------------------------------------|----------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb)                           |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
| THIS WELL WAS NOT RUNNING THE DAY SAMPLES<br>WERE CAUGHT |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |
|                                                          |          |          |          |          |

RA-1331 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                   | 03/10/95         | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|------------------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) | Carbon Disulfide | 7        |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |

RA-307 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                   | 03/09/95         | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|------------------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) |                  |          |          |          |
|                                |                  |          |          |          |
|                                | Carbon Disulfide | 3        |          |          |
|                                |                  |          |          |          |
|                                | Toluene          | 1        |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |
|                                |                  |          |          |          |

RA-1227 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                   | 03/09/95 | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|----------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) | MTBE     |          | 2        | 2        |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |
|                                |          |          |          |          |

RA-3156 ONLY DURING IRRIGATION SEASON

| DATE SAMPLED                   | 03/09/95 | 06/28/95 |  |
|--------------------------------|----------|----------|--|
| COMPOUNDS<br>DETECTED<br>(ppb) |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |
|                                |          |          |  |





RA-4196

| DATE SAMPLED                   | 01/26/95           | 02/22/95 | 03/09/95 | 04/21/95 | 05/22/95 | 06/28/95 |
|--------------------------------|--------------------|----------|----------|----------|----------|----------|
| COMPOUNDS<br>DETECTED<br>(ppb) |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |
|                                | Carbon Disulfide   |          | 2        |          |          |          |
|                                | 1,2-Dichloroethane |          |          |          | 1        |          |
|                                |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |
|                                |                    |          |          |          |          |          |

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

April 19, 1995  
Receiving Date: 04/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/13/95  
Sampling Date: 04/10/95  
Sample Condition: Intact & Cool  
Sample Received by: DA  
Project Name: NA

| EPA 624 Compounds (ppb)   | T34661<br>RA-2723 | Detection<br>Limit |
|---------------------------|-------------------|--------------------|
| Chloromethane             | ND                | 50                 |
| Vinyl chloride            | ND                | 10                 |
| Bromomethane              | ND                | 50                 |
| Chloroethane              | ND                | 10                 |
| Trichlorofluoromethane    | ND                | 10                 |
| 1,1-Dichloroethene        | ND                | 10                 |
| Methylene chloride        | ND                | 50                 |
| trans-1,2-Dichloroethene  | ND                | 10                 |
| 1,1-Dichloroethane        | ND                | 10                 |
| Chloroform                | ND                | 10                 |
| 1,1,1-Trichloroethane     | ND                | 10                 |
| 1,2-Dichloroethane        | ND                | 10                 |
| Benzene                   | ND                | 10                 |
| Carbon Tetrachloride      | ND                | 10                 |
| 1,2-Dichloropropane       | ND                | 10                 |
| Trichloroethene           | ND                | 10                 |
| Bromodichloromethane      | ND                | 10                 |
| cis-1,3-Dichloropropene   | ND                | 10                 |
| trans-1,3-Dichloropropene | ND                | 10                 |
| Toluene                   | ND                | 10                 |
| 1,1,2-Trichloroethane     | ND                | 10                 |



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| EPA 624 Compounds<br>(ppb) | T34661<br>RA-2723 | Detection<br>Limit |
|----------------------------|-------------------|--------------------|
| Dibromochloromethane       | ND                | 10                 |
| Tetrachloroethene          | ND                | 10                 |
| Chlorobenzene              | ND                | 10                 |
| Ethylbenzene               | ND                | 10                 |
| Bromoform                  | ND                | 10                 |
| 1,1,2,2-Tetrachloroethane  | ND                | 10                 |
| 1,4-Dichlorobenzene        | ND                | 20                 |
| 1,3-Dichlorobenzene        | ND                | 20                 |
| 1,2-Dichlorobenzene        | ND                | 20                 |

| SURROGATES           | % RECOVERY |
|----------------------|------------|
| Dibromofluoromethane | 100        |
| Toluene-d8           | 101        |
| 4-Bromofluorobenzene | 95         |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

4-19-95  
Date

6701 Aberdeen Avenue  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

April 19, 1995  
Receiving Date: 04/11/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/13/95  
Sampling Date: 04/10/95  
Sample Condition: Intact & Cool  
Sample Received by: DA  
Project Name: NA

| TA#                   | FIELD CODE      | MTBE<br>(ppb) |
|-----------------------|-----------------|---------------|
| T34661                | RA-2723         | ND            |
| QC                    | Quality Control | 226           |
| Detection Limit       |                 | 1             |
| % Precision           |                 | 118           |
| % Extraction Accuracy |                 | 121           |
| % Instrument Accuracy |                 | 113           |

ND = Not Detected

METHODS: EPA 602.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

4-19-95  
\_\_\_\_\_  
DATE

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35094<br>RA - 313 | Detection<br>Limit |
|---------------------------|--------------------|--------------------|
| Chloromethane             | ND                 | 1                  |
| Vinyl chloride            | ND                 | 1                  |
| Bromomethane              | ND                 | 5                  |
| Chloroethane              | ND                 | 1                  |
| Trichlorofluoromethane    | ND                 | 1                  |
| 1,1-Dichloroethene        | ND                 | 1                  |
| Methylene chloride        | ND                 | 5                  |
| trans-1,2-Dichloroethene  | ND                 | 1                  |
| 1,1-Dichloroethane        | ND                 | 1                  |
| Chloroform                | ND                 | 1                  |
| 1,1,1-Trichloroethane     | ND                 | 1                  |
| 1,2-Dichloroethane        | ND                 | 1                  |
| Benzene                   | ND                 | 1                  |
| Carbon Tetrachloride      | ND                 | 1                  |
| 1,2-Dichloropropane       | ND                 | 1                  |
| Trichloroethene           | ND                 | 1                  |
| Bromodichloromethane      | ND                 | 1                  |
| cis-1,3-Dichloropropene   | ND                 | 1                  |
| trans-1,3-Dichloropropene | ND                 | 1                  |
| Toluene                   | ND                 | 1                  |
| 1,1,2-Trichloroethane     | ND                 | 1                  |

## NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb) | T35094<br>RA - 313 | Detection<br>Limit |
|----------------------------|--------------------|--------------------|
| Dibromochloromethane       | ND                 | 1                  |
| Tetrachloroethene          | ND                 | 1                  |
| Chlorobenzene              | ND                 | 1                  |
| Ethylbenzene               | ND                 | 1                  |
| m,p-Xylene                 | ND                 | 1                  |
| Bromoform                  | ND                 | 1                  |
| o-Xylene                   | ND                 | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                 | 1                  |
| 1,4-Dichlorobenzene        | ND                 | 2                  |
| 1,3-Dichlorobenzene        | ND                 | 2                  |
| 1,2-Dichlorobenzene        | ND                 | 2                  |
| MTBE                       | ND                 | 5                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 105 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell5-10-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35095<br>RA - 2723 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



| EPA 624 Compounds<br>(ppb) | T35095<br>RA - 2723 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 5                  |

| SURROGATES           | % RECOVERY |
|----------------------|------------|
| Dibromofluoromethane | 103        |
| Toluene-d8           | 101        |
| 4-Bromofluorobenzene | 98         |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35096<br>RA - 4798 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | 3                   | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |

NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb) | T35096<br>RA - 4798 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 5                  |

| SURROGATES           | % RECOVERY |
|----------------------|------------|
| Dibromofluoromethane | 103        |
| Toluene-d8           | 100        |
| 4-Bromofluorobenzene | 98         |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35097<br>RA - 4196 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



TRACE ANALYSIS, INC.

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NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb) | T35097<br>RA - 4196 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 5                  |

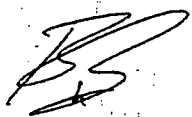
SURROGATES

% RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 103 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35098<br>RA - 307 | Detection<br>Limit |
|---------------------------|--------------------|--------------------|
| Chloromethane             | ND                 | 1                  |
| Vinyl chloride            | ND                 | 1                  |
| Bromomethane              | ND                 | 5                  |
| Chloroethane              | ND                 | 1                  |
| Trichlorofluoromethane    | ND                 | 1                  |
| 1,1-Dichloroethene        | ND                 | 1                  |
| Methylene chloride        | ND                 | 5                  |
| trans-1,2-Dichloroethene  | ND                 | 1                  |
| 1,1-Dichloroethane        | ND                 | 1                  |
| Chloroform                | ND                 | 1                  |
| 1,1,1-Trichloroethane     | ND                 | 1                  |
| 1,2-Dichloroethane        | ND                 | 1                  |
| Benzene                   | ND                 | 1                  |
| Carbon Tetrachloride      | ND                 | 1                  |
| 1,2-Dichloropropane       | ND                 | 1                  |
| Trichloroethene           | ND                 | 1                  |
| Bromodichloromethane      | ND                 | 1                  |
| cis-1,3-Dichloropropene   | ND                 | 1                  |
| trans-1,3-Dichloropropene | ND                 | 1                  |
| Toluene                   | ND                 | 1                  |
| 1,1,2-Trichloroethane     | ND                 | 1                  |

NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb) | T35098<br>RA - 307 | Detection<br>Limit |
|----------------------------|--------------------|--------------------|
| Dibromochloromethane       | ND                 | 1                  |
| Tetrachloroethene          | ND                 | 1                  |
| Chlorobenzene              | ND                 | 1                  |
| Ethylbenzene               | ND                 | 1                  |
| m,p-Xylene                 | ND                 | 1                  |
| Bromoform                  | ND                 | 1                  |
| o-Xylene                   | ND                 | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                 | 1                  |
| 1,4-Dichlorobenzene        | ND                 | 2                  |
| 1,3-Dichlorobenzene        | ND                 | 2                  |
| 1,2-Dichlorobenzene        | ND                 | 2                  |
| MTBE                       | ND                 | 5                  |

**SURROGATES**

**% RECOVERY**

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 104 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 97  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35099<br>RA - 1331 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



| EPA 624 Compounds<br>(ppb) | T35099<br>RA - 1331 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 5                  |

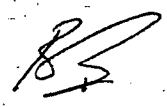
**SURROGATES**

**% RECOVERY**

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 104 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
\_\_\_\_\_  
Date

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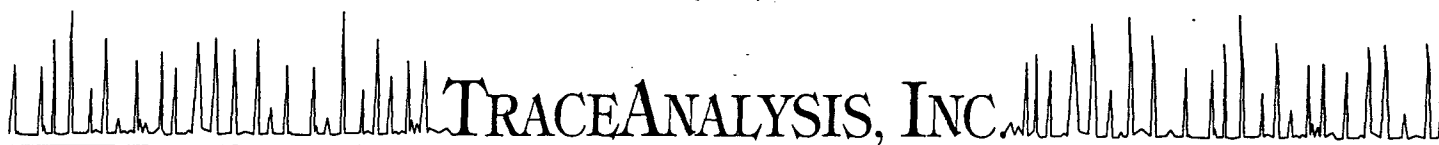
ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 04/22/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 04/28/95  
Sampling Date: 04/21/95  
Sample Condition: Intact & Cool  
Sample Received by: DH  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35100<br>RA - 1227 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



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| EPA 624 Compounds<br>(ppb) | T35100<br>RA - 1227 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 5                  |

**SURROGATES**

**% RECOVERY**

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 105 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 10, 1995  
Receiving Date: 05/02/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Analysis Date: 05/02/95  
Sampling Date: 05/01/95  
Sample Condition: Intact & Cool  
Sample Received by: JT  
Project Name: NA

| EPA 624 Compounds (ppb)   | T35482<br>RA - 2723 | Detection<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 5                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



TRACE ANALYSIS, INC.

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NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ppb) | T35482<br>RA - 2723 | Detection<br>Limit |
|----------------------------|---------------------|--------------------|
| Dibromochloromethane       | ND                  | 1                  |
| Tetrachloroethene          | ND                  | 1                  |
| Chlorobenzene              | ND                  | 1                  |
| Ethylbenzene               | ND                  | 1                  |
| m,p-Xylene                 | ND                  | 1                  |
| Bromoform                  | ND                  | 1                  |
| o-Xylene                   | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane  | ND                  | 1                  |
| 1,4-Dichlorobenzene        | ND                  | 2                  |
| 1,3-Dichlorobenzene        | ND                  | 2                  |
| 1,2-Dichlorobenzene        | ND                  | 2                  |
| MTBE                       | ND                  | 1                  |

SURROGATES

% RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 102 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 99  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-10-98  
\_\_\_\_\_  
Date

501 Aberdeen Avenue  
Lubbock, Texas 79424  
806•794•1296  
FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36391<br>RA - 313 | Reporting<br>Limit |
|---------------------------|--------------------|--------------------|
| Chloromethane             | ND                 | 1                  |
| Vinyl chloride            | ND                 | 1                  |
| Bromomethane              | ND                 | 5                  |
| Chloroethane              | ND                 | 1                  |
| Trichlorofluoromethane    | ND                 | 1                  |
| 1,1-Dichloroethene        | ND                 | 1                  |
| Methylene chloride        | ND                 | 5                  |
| trans-1,2-Dichloroethene  | ND                 | 1                  |
| 1,1-Dichloroethane        | ND                 | 1                  |
| Chloroform                | ND                 | 1                  |
| 1,1,1-Trichloroethane     | ND                 | 1                  |
| 1,2-Dichloroethane        | ND                 | 1                  |
| Benzene                   | ND                 | 1                  |
| Carbon Tetrachloride      | ND                 | 1                  |
| 1,2-Dichloropropane       | ND                 | 1                  |
| Trichloroethene           | ND                 | 1                  |
| Bromodichloromethane      | ND                 | 1                  |
| cis-1,3-Dichloropropene   | ND                 | 1                  |
| trans-1,3-Dichloropropene | ND                 | 1                  |
| Toluene                   | ND                 | 1                  |
| 1,1,2-Trichloroethane     | ND                 | 1                  |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36391<br>RA - 313 | Reporting<br>Limit |
|-----------------------------|--------------------|--------------------|
| Dibromochloromethane        | ND                 | 1                  |
| Tetrachloroethene           | ND                 | 1                  |
| Chlorobenzene               | ND                 | 1                  |
| Ethylbenzene                | ND                 | 1                  |
| m,p-Xylene                  | ND                 | 1                  |
| Bromoform                   | ND                 | 1                  |
| o-Xylene                    | ND                 | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                 | 1                  |
| 1,4-Dichlorobenzene         | ND                 | 2                  |
| 1,3-Dichlorobenzene         | ND                 | 2                  |
| 1,2-Dichlorobenzene         | ND                 | 2                  |
| MTBE                        | ND                 | 1                  |

| SURROGATES           | % RECOVERY |
|----------------------|------------|
| Dibromofluoromethane | 94         |
| Toluene-d8           | 96         |
| 4-Bromofluorobenzene | 92         |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-31-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36392<br>RA - 2723 | Reporting<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis



NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36392<br>RA - 2723 | Reporting<br>Limit |
|-----------------------------|---------------------|--------------------|
| Dibromochloromethane        | ND                  | 1                  |
| Tetrachloroethene           | ND                  | 1                  |
| Chlorobenzene               | ND                  | 1                  |
| Ethylbenzene                | ND                  | 1                  |
| m,p-Xylene                  | ND                  | 1                  |
| Bromoform                   | ND                  | 1                  |
| o-Xylene                    | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                  | 1                  |
| 1,4-Dichlorobenzene         | ND                  | 2                  |
| 1,3-Dichlorobenzene         | ND                  | 2                  |
| 1,2-Dichlorobenzene         | ND                  | 2                  |
| MTBE                        | ND                  | 1                  |

SURROGATES

% RECOVERY

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 96 |
| Toluene-d8           | 96 |
| 4-Bromofluorobenzene | 94 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-31-95  
\_\_\_\_\_  
Date

6701 Aberdeen Avenue

Lubbock, Texas 79424

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995

Receiving Date: 05/23/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Prep Date: 05/24/95

Analysis Date: 05/24/95

Sampling Date: 05/22/95

Sample Condition: Intact & Cool

Sample Received by: JW

Project Name: NA

| EPA 624 Compounds (ug/L)  | T36393<br>RA - 1331 | Reporting<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |

TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36393<br>RA - 1331 | Reporting<br>Limit |
|-----------------------------|---------------------|--------------------|
| Dibromochloromethane        | ND                  | 1                  |
| Tetrachloroethene           | ND                  | 1                  |
| Chlorobenzene               | ND                  | 1                  |
| Ethylbenzene                | ND                  | 1                  |
| m,p-Xylene                  | ND                  | 1                  |
| Bromoform                   | ND                  | 1                  |
| o-Xylene                    | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                  | 1                  |
| 1,4-Dichlorobenzene         | ND                  | 2                  |
| 1,3-Dichlorobenzene         | ND                  | 2                  |
| 1,2-Dichlorobenzene         | ND                  | 2                  |
| MTBE                        | ND                  | 1                  |

## SURROGATES

## % RECOVERY

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 98 |
| Toluene-d8           | 96 |
| 4-Bromofluorobenzene | 94 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell5-31-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36394<br>RA - 1227 | Reporting<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | ND                  | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |

TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

| EPA 624 Compounds<br>(ug/L) | T36394<br>RA - 1227 | Reporting<br>Limit |
|-----------------------------|---------------------|--------------------|
| Dibromochloromethane        | ND                  | 1                  |
| Tetrachloroethene           | ND                  | 1                  |
| Chlorobenzene               | ND                  | 1                  |
| Ethylbenzene                | ND                  | 1                  |
| m,p-Xylene                  | ND                  | 1                  |
| Bromoform                   | ND                  | 1                  |
| o-Xylene                    | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                  | 1                  |
| 1,4-Dichlorobenzene         | ND                  | 2                  |
| 1,3-Dichlorobenzene         | ND                  | 2                  |
| 1,2-Dichlorobenzene         | ND                  | 2                  |
| MTBE                        | 2                   | 1                  |

**SURROGATES**

**% RECOVERY**

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 98 |
| Toluene-d8           | 96 |
| 4-Bromofluorobenzene | 94 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-31-95  
\_\_\_\_\_  
Date

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806•794•1296  
FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36395<br>RA - 307 | Reporting<br>Limit |
|---------------------------|--------------------|--------------------|
| Chloromethane             | ND                 | 1                  |
| Vinyl chloride            | ND                 | 1                  |
| Bromomethane              | ND                 | 5                  |
| Chloroethane              | ND                 | 1                  |
| Trichlorofluoromethane    | ND                 | 1                  |
| 1,1-Dichloroethene        | ND                 | 1                  |
| Methylene chloride        | ND                 | 5                  |
| trans-1,2-Dichloroethene  | ND                 | 1                  |
| 1,1-Dichloroethane        | ND                 | 1                  |
| Chloroform                | ND                 | 1                  |
| 1,1,1-Trichloroethane     | ND                 | 1                  |
| 1,2-Dichloroethane        | ND                 | 1                  |
| Benzene                   | ND                 | 1                  |
| Carbon Tetrachloride      | ND                 | 1                  |
| 1,2-Dichloropropane       | ND                 | 1                  |
| Trichloroethene           | ND                 | 1                  |
| Bromodichloromethane      | ND                 | 1                  |
| cis-1,3-Dichloropropene   | ND                 | 1                  |
| trans-1,3-Dichloropropene | ND                 | 1                  |
| Toluene                   | ND                 | 1                  |
| 1,1,2-Trichloroethane     | ND                 | 1                  |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36395<br>RA - 307 | Reporting<br>Limit |
|-----------------------------|--------------------|--------------------|
| Dibromochloromethane        | ND                 | 1                  |
| Tetrachloroethene           | ND                 | 1                  |
| Chlorobenzene               | ND                 | 1                  |
| Ethylbenzene                | ND                 | 1                  |
| m,p-Xylene                  | ND                 | 1                  |
| Bromoform                   | ND                 | 1                  |
| o-Xylene                    | ND                 | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                 | 1                  |
| 1,4-Dichlorobenzene         | ND                 | 2                  |
| 1,3-Dichlorobenzene         | ND                 | 2                  |
| 1,2-Dichlorobenzene         | ND                 | 2                  |
| MTBE                        | ND                 | 1                  |

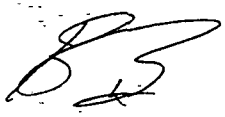
SURROGATES

% RECOVERY

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 96 |
| Toluene-d8           | 96 |
| 4-Bromofluorobenzene | 94 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-31-95  
\_\_\_\_\_  
Date

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36396<br>RA - 4196 | Reporting<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | 1                   | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis



Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36396<br>RA - 4196 | Reporting<br>Limit |
|-----------------------------|---------------------|--------------------|
| Dibromochloromethane        | ND                  | 1                  |
| Tetrachloroethene           | ND                  | 1                  |
| Chlorobenzene               | ND                  | 1                  |
| Ethylbenzene                | ND                  | 1                  |
| m & p-Xylene                | ND                  | 1                  |
| Bromoform                   | ND                  | 1                  |
| o-Xylene                    | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                  | 1                  |
| 1,4-Dichlorobenzene         | ND                  | 2                  |
| 1,3-Dichlorobenzene         | ND                  | 2                  |
| 1,2-Dichlorobenzene         | ND                  | 2                  |
| MTBE                        | ND                  | 1                  |

## TENTATIVELY IDENTIFIED COMPOUNDS &amp; ESTIMATED CONCENTRATION (ug/L)

(1) Tetrahydrofuran

49

## SURROGATES

## % RECOVERY

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 98 |
| Toluene-d8           | 98 |
| 4-Bromofluorobenzene | 96 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell5-31-95  
\_\_\_\_\_  
Date

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FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

May 31, 1995  
Receiving Date: 05/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 05/24/95  
Analysis Date: 05/24/95  
Sampling Date: 05/22/95  
Sample Condition: Intact & Cool  
Sample Received by: JW  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T36397<br>RA - 4798 | Reporting<br>Limit |
|---------------------------|---------------------|--------------------|
| Chloromethane             | ND                  | 1                  |
| Vinyl chloride            | ND                  | 1                  |
| Bromomethane              | ND                  | 5                  |
| Chloroethane              | ND                  | 1                  |
| Trichlorofluoromethane    | ND                  | 1                  |
| 1,1-Dichloroethene        | ND                  | 1                  |
| Methylene chloride        | ND                  | 5                  |
| trans-1,2-Dichloroethene  | ND                  | 1                  |
| 1,1-Dichloroethane        | ND                  | 1                  |
| Chloroform                | ND                  | 1                  |
| 1,1,1-Trichloroethane     | ND                  | 1                  |
| 1,2-Dichloroethane        | 3                   | 1                  |
| Benzene                   | ND                  | 1                  |
| Carbon Tetrachloride      | ND                  | 1                  |
| 1,2-Dichloropropane       | ND                  | 1                  |
| Trichloroethene           | ND                  | 1                  |
| Bromodichloromethane      | ND                  | 1                  |
| cis-1,3-Dichloropropene   | ND                  | 1                  |
| trans-1,3-Dichloropropene | ND                  | 1                  |
| Toluene                   | ND                  | 1                  |
| 1,1,2-Trichloroethane     | ND                  | 1                  |

NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T36397<br>RA - 4798 | Reporting<br>Limit |
|-----------------------------|---------------------|--------------------|
| Dibromochloromethane        | ND                  | 1                  |
| Tetrachloroethene           | ND                  | 1                  |
| Chlorobenzene               | ND                  | 1                  |
| Ethylbenzene                | ND                  | 1                  |
| m,p-Xylene                  | ND                  | 1                  |
| Bromoform                   | ND                  | 1                  |
| o-Xylene                    | ND                  | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                  | 1                  |
| 1,4-Dichlorobenzene         | ND                  | 2                  |
| 1,3-Dichlorobenzene         | ND                  | 2                  |
| 1,2-Dichlorobenzene         | ND                  | 2                  |
| MTBE                        | ND                  | 1                  |

SURROGATES

% RECOVERY

|                      |    |
|----------------------|----|
| Dibromofluoromethane | 97 |
| Toluene-d8           | 96 |
| 4-Bromofluorobenzene | 92 |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

5-31-95  
\_\_\_\_\_  
Date



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue      Lubbock, Texas 79424      806•794•1296      FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

June 8, 1995  
Receiving Date: 06/06/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 06/08/95  
Analysis Date: 06/08/95  
Sampling Date: 06/05/95  
Sample Condition: Intact & Cool  
Sample Received by: LW  
Project Name: RO Reject Qtrly

| TA# | Field Code | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|

|        |                 |    |    |    |    |     |    |
|--------|-----------------|----|----|----|----|-----|----|
| T36840 | RA-2723         | <1 | <1 | <1 | <1 | <1  | <1 |
| QC     | Quality Control | 54 | 48 | 48 | 48 | 146 |    |

|                 |   |   |   |   |   |   |  |
|-----------------|---|---|---|---|---|---|--|
| Reporting Limit | 1 | 1 | 1 | 1 | 1 | 1 |  |
|-----------------|---|---|---|---|---|---|--|

|                       |     |    |    |    |    |    |  |
|-----------------------|-----|----|----|----|----|----|--|
| RPD                   | 26  | 28 | 26 | 26 | 26 | 26 |  |
| % Extraction Accuracy | 80  | 84 | 80 | 80 | 80 | 80 |  |
| % Instrument Accuracy | 108 | 96 | 96 | 96 | 96 | 97 |  |

METHODS: EPA SW 846-8020, 5030.  
BTX SPIKE AND QC: 50 mg/L MTBE/BTEX.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDowell

7-5-95

Date





181AE.

**6701 Aberdeen Avenue      Lubbock, Texas 79424**  
**Tel (806) 794 1296      Fax (806) 794 1298**

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST •

| Project Manager:        |                 |              |               |        |      |     | Phone #:<br>FAX #: |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
|-------------------------|-----------------|--------------|---------------|--------|------|-----|--------------------|---------------------|-----|------|-----|----------|-------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|----------------------------------------------------------------|
| Company Name & Address: |                 |              |               |        |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| Project #:              |                 |              |               |        |      |     |                    | Project Name :      |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| Project Location:       |                 |              |               |        |      |     |                    | Sampler Signature:  |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| LAB #<br>(LAB USE ONLY) | FIELD CODE      | # CONTAINERS | Volume/Amount | MATRIX |      |     |                    | PRESERVATIVE METHOD |     |      |     | SAMPLING |       | TPH<br>TCLP Metals Ag As Ba Cd Cr Pb Hg Se<br>Total Metals Ag As Ba Cd Cr Pb Hg Se<br>TCLP Volatiles<br>TCLP Semi Volatiles<br>TDS<br>RCI | ANALYSIS REQUEST | SPECIAL HANDLING |                                                                |
|                         |                 |              |               | WATER  | SOIL | AIR | SUDGE              | OTHER               | HCL | HNO3 | ICE | NONE     | OTHER |                                                                                                                                           |                  |                  | DATE                                                           |
| 30170                   | KWB-3A          | 2            | 40ml X        | X      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  | Turn around # of days<br>Fax ASAP<br>Report TWC direct<br>Hold |
| 30171                   | KWB-1A          | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30172                   | KWB-12A         | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30173                   | KWB-11A         | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30174                   | KWB-1C          | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30175                   | MW-18           | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30176                   | MW-45           | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30177                   | Navajo Effluent | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |
| 30178                   | KWB-2A          | "            | "             | "      |      |     |                    |                     |     |      |     |          |       |                                                                                                                                           |                  |                  |                                                                |

2nd Page

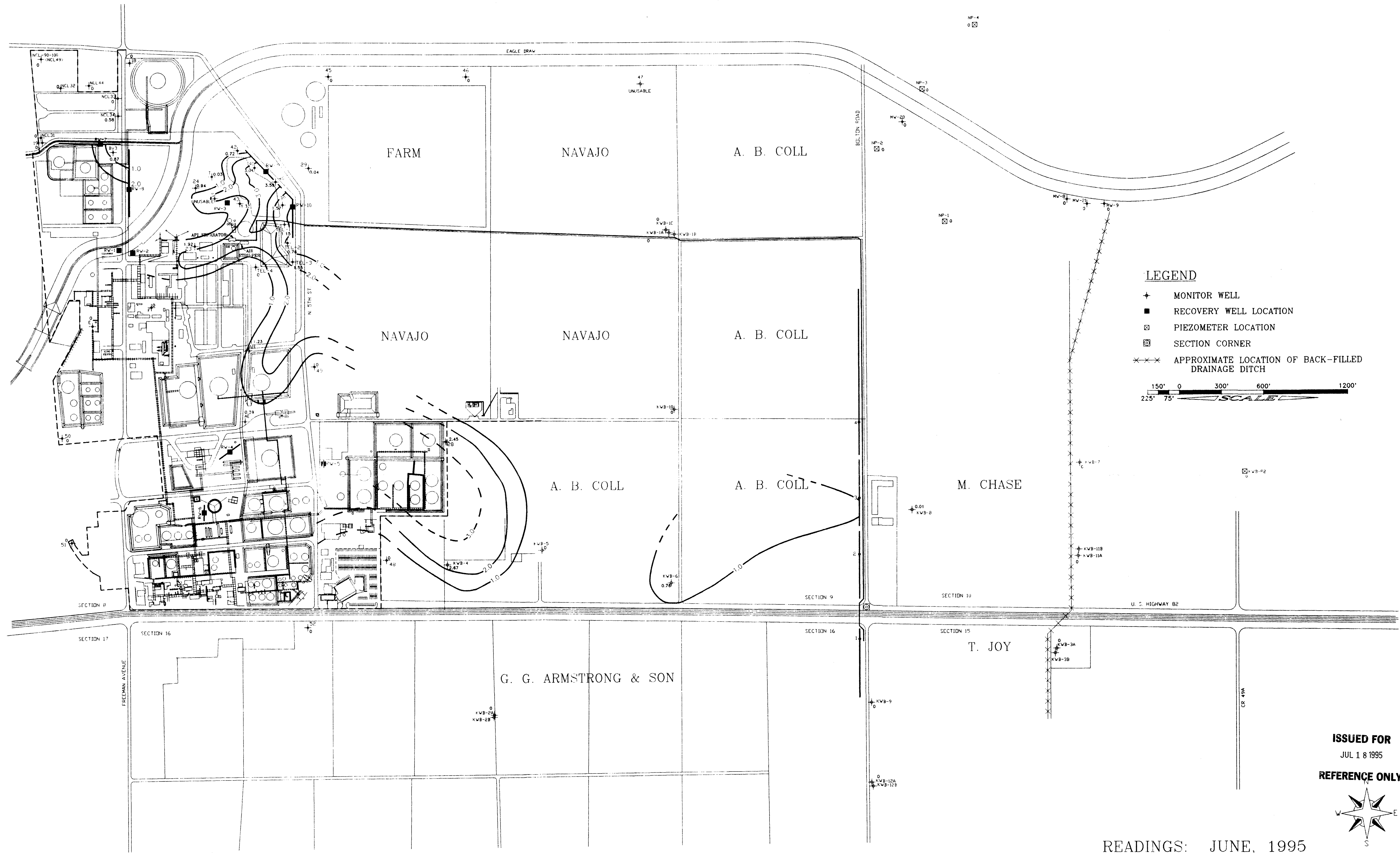
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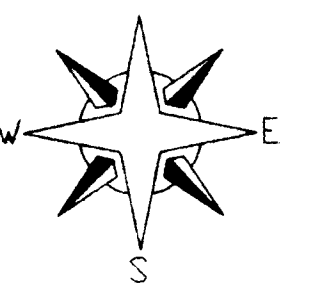
# LEGEND

- MONITOR WELL
- RECOVERY WELL LOCATION
- PIEZOMETER LOCATION
- SECTION CORNER
- APPROXIMATE LOCATION OF BACK-FILLED DRAINAGE DITCH

150' 0 300' 600' 1200'  
225' 75' SCALED

ISSUED FOR  
JUL 18 1995

REFERENCE ONLY



READINGS: JUNE, 1995

NOTES

REFERENCE DRAWINGS

| NO. | REVISIONS                        | BY   | CHK. | DATE    | APPR. | APPR. | NO. | REVISIONS | BY | CHK. | DATE | APPR. | APPR. |
|-----|----------------------------------|------|------|---------|-------|-------|-----|-----------|----|------|------|-------|-------|
| 0   | ISSUED WITH MARCH, 1995 READINGS | PETE | DGJ  | 3-27-95 | DGM   | ILS   |     |           |    |      |      |       |       |
| 1   | JUNE, 1995 READINGS              | PETE | DGJ  | 7-18-95 | DGM   | ILS   |     |           |    |      |      |       |       |

DRAWING TITLE

PRODUCT THICKNESS  
MAP  
NAVAJO REFINING

|          |          |                                                                                                |      |
|----------|----------|------------------------------------------------------------------------------------------------|------|
|          |          | <b>NAVAJO REFINING CO.</b><br>ENGINEERING DEPARTMENT<br>P.O. DRAWER 159<br>ARTESIA, NEW MEXICO |      |
| DRAWN BY | CHK'D BY | SCALE                                                                                          |      |
| PETE     | DGM      | AS SHOWN                                                                                       |      |
| DATE     | APPR. BY | DRAWING NUMBER                                                                                 | REV. |
| 7-17-95  | ILS      | 90-45-B                                                                                        | 1    |





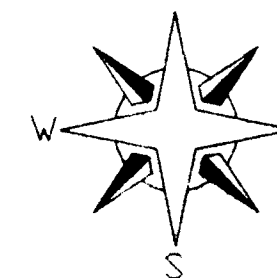
LEGEND

- MONITOR WELL
- RECOVERY WELL LOCATION
- PIEZOMETER LOCATION
- SECTION CORNER
- APPROXIMATE LOCATION OF BACK-FILLED DRAINAGE DITCH

150' 0' 300' 600' 1200'  
225' 75' SCALE

ISSUED FOR  
JUL 18 1995

REFERENCE ONLY



READINGS: JUNE, 1995

NOTES

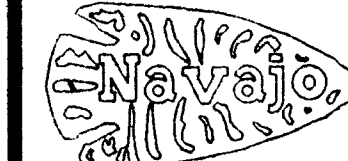
REFERENCE DRAWINGS

| NO. | REVISIONS                        | BY | CHK | DATE | APPR | APPR | NO. | REVISIONS                        | BY   | CHK | DATE    | APPR | APPR |
|-----|----------------------------------|----|-----|------|------|------|-----|----------------------------------|------|-----|---------|------|------|
| 0   | ISSUED WITH MARCH, 1995 READINGS |    |     |      |      |      | 0   | ISSUED WITH MARCH, 1995 READINGS | PETE | DGJ | 5-27-95 | DGM  | ILS  |
| 1   | JUNE, 1995 READINGS              |    |     |      |      |      | 1   | JUNE, 1995 READINGS              | PETE | DGJ | 7-13-95 | DGM  | ILS  |

| NO. | REVISIONS                        | BY   | CHK | DATE    | APPR | APPR |
|-----|----------------------------------|------|-----|---------|------|------|
| 0   | ISSUED WITH MARCH, 1995 READINGS | PETE | DGJ | 5-27-95 | DGM  | ILS  |
| 1   | JUNE, 1995 READINGS              | PETE | DGJ | 7-13-95 | DGM  | ILS  |

DRAWING TITLE

GROUNDWATER  
POTENTIOMETRIC MAP  
NAVAJO REFINING

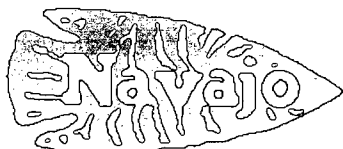


NAVAJO REFINING CO.  
ENGINEERING DEPARTMENT  
P.O. DRAWER 159  
ARTESIA, NEW MEXICO

| DRAWN BY | CHK'D BY | SCALE          |
|----------|----------|----------------|
| PETE     | DGM      | AS SHOWN       |
| DATE     | APPR BY  | DRAWING NUMBER |
| 3-17-95  | ILS      | 90-44-D        |
| REV.     |          |                |
| 1        |          |                |

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



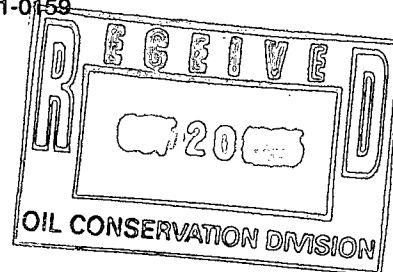
## REFINING COMPANY

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

October 18, 1995

FAX  
(505) 746-6410 ACCTG  
(505) 746-6155 EXEC  
(505) 748-9077 ENGR  
(505) 746-4438 P / L

Mr Bill Olson  
Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472



**RE: 3rd QUARTER 1995 INVESTIGATIVE REPORT - GROUND WATER REMEDIATION,  
NAVAJO REFINING CO., EDDY COUNTY, NM**

Dear Bill,

Enclosed, please find 1) Ground Water potentiometric map, 2) Product thickness map, and 3) analysis of our sampling for this quarter. We continue to detect small amounts of MTBE in RA-1227 which is the irrigation well on the Joy farm. As you can see on the analysis, MW-45, KWB-1A, and KWB-1C all had varying amounts of MTBE.

We have set up the wells on timers to get an idea of how much water each one pumped. Although this is not entirely accurate, it is the best system we have been able to come up with. The amount of fluid pumped this quarter from each well is as follows:

|             | PRODUCT          | WATER           |
|-------------|------------------|-----------------|
| RW-1        | 4065.68 GALLONS  | 24760 GALLONS   |
| RW-2        | 28434.50 GALLONS | 170600 GALLONS  |
| RW-4        | 10096.86 GALLONS | 600800 GALLONS  |
| RW-5        | 5408.52 GALLONS  | 34500 GALLONS   |
| RW-7        | 12381.90 GALLONS | 75890 GALLONS   |
| RW-8        | 1352.31 GALLONS  | 8200 GALLONS    |
| RW-9        | 92.66 GALLONS    | 760500 GALLONS  |
| RW-10       | 2190.96 GALLONS  | 460800 GALLONS  |
| BOLTON RD-1 | 0.81 GALLONS     | 3050 GALLONS    |
| BOLTON RD-2 | 0 GALLONS        | 20500 GALLONS   |
| BOLTON RD-3 | 0 GALLONS        | 950000 GALLONS  |
| BOLTON RD-4 | 0 GALLONS        | 1560700 GALLONS |

This comes to a total of 64024.2 gallons of product pumped and 4670300 gallons of water pumped plant wide this quarter. These totals are from July 1, 1995 to September 30, 1995. As you can see, RW-9 and the Bolton Road well's production dropped significantly. These wells are being drowned with water which rises to a level so that the oil is above the perforated interval. We have tried bigger pumps to get the cone of depression down, but we couldn't pump enough water to reach that point. We are looking into options to remedy this problem. Finally, the water totals are only approximations based on the time the pumps ran.

If there are any questions concerning this report, please call me at 505-748-3311. Thank you for your time in this matter.

Regards,  
NAVAJO REFINING CO.

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

Darrell Moore  
Sr. Environmental Specialist  
Encl.

## TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1288

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 09/25/95

Analysis Date: 09/25/95

Sampling Date: 09/20-21/95

Sample Condition: Intact &amp; Cool

Sample Received by: MS

Project Name: NA

September 26, 1995

Receiving Date: 09/23/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

| TA#                   | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|-----------------------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T41692                | RA-3156         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41693                | RA-3353         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41698                | RA-1227         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41700                | RA-2723         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41701                | RA-1331         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41702                | RA-307          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41703                | RA-4196         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41704                | RA-4798         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41705                | RA-314          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T41706                | RA-313          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| QC                    | Quality Control | 99             | 94                | 108               | 105                         | 310                       |                        |
| Reporting Limit       |                 | 1              | 1                 | 1                 | 1                           | 1                         |                        |
| RPD                   |                 | 1              | 1                 | 1                 | 1                           | 2                         |                        |
| % Extraction Accuracy |                 | 87             | 83                | 99                | 101                         | 300                       |                        |
| % Instrument Accuracy |                 | 99             | 94                | 108               | 105                         | 310                       |                        |

METHODS: EPA 602.

BTX SPIKE AND QC: 100 ug/L BTX.

BS

Director, Dr. Blair Leftwich  
 Director, Dr. Bruce McDonell

Date

9-26-95



6701 Abordeen Avenue  
Lubbock, Texas 79424  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/27/95  
Analysis Date: 09/27/95  
Sampling Date: 09/20/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41690<br>KWB-12A | Reporting<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 5                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 5                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 5                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |

**TRACE ANALYSIS, INC.**  
A Laboratory for Advanced Environmental Research and Analysis

| EPA 624 Compounds<br>(ug/L) | T41690<br>KWB-12A | Reporting<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethane           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |
| MTBE                        | ND                | 2                  |

**SURROGATES**

**% RECOVERY**

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 114 |
| Toluene-d8           | 100 |
| 4-Bromofluorobenzene | 91  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
\_\_\_\_\_  
Date

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
806•794•1296  
FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/27/95  
Analysis Date: 09/27/95  
Sampling Date: 09/20/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41691<br>MW-18 | Reporting<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 5                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 5                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 5                  |
| Trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | ND              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |

TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

**NAVAJO REFINING COMPANY**

Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41691<br>MW-18 | Reporting<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | ND              | 1                  |
| Bromotorm                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |
| MTBE                        | ND              | 2                  |

**SURROGATES****% RECOVERY**

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 108 |
| Toluene-d8           | 102 |
| 4-Bromofluorobenzene | 94  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
\_\_\_\_\_  
Date



6701 Aberdeen Avenue  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/27/95  
Analysis Date: 09/27/95  
Sampling Date: 09/21/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41694<br>KWB-7 | Reporting<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 5                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 5                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 5                  |
| trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | ND              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

## NAVAJO REFINING COMPANY

PAGE 2 of 2

Project Location: Artesia, NM

| EPA 624 Compounds<br>(ug/L) | T41694<br>KWB-7 | Reporting<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | ND              | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |
| MTBE                        | ND              | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 110 |
| Toluene-d8           | 99  |
| 4-Bromofluorobenzene | 95  |

\*ND = Not Detected

METHODS: EPA 624.

*B3*  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

*10-5-95*  
\_\_\_\_\_  
Date

6701 Aberdeen Avenue  
Lubbock, Texas 79424  
806•794•1290  
FAX 806•794•1298

ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/27/95  
Analysis Date: 09/27/95  
Sampling Date: 09/21/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41695<br>KWB-1A | Reporting<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 10                 |
| Chloromethane             | ND               | 10                 |
| Vinyl chloride            | ND               | 10                 |
| Bromomethane              | ND               | 50                 |
| Chloroethane              | ND               | 10                 |
| Trichlorofluoromethane    | ND               | 10                 |
| 1,1-Dichloroethene        | ND               | 10                 |
| Iodomethane               | ND               | 50                 |
| Carbon disulfide          | ND               | 10                 |
| Methylene chloride        | ND               | 50                 |
| trans-1,2-Dichloroethene  | ND               | 10                 |
| 1,1-Dichloroethane        | ND               | 10                 |
| Vinyl acetate             | ND               | 10                 |
| 2-Butanone                | ND               | 500                |
| Chloroform                | ND               | 10                 |
| 1,1,1-Trichloroethane     | ND               | 10                 |
| 1,2-Dichloroethane        | ND               | 10                 |
| Benzene                   | 105              | 10                 |
| Carbon Tetrachloride      | ND               | 10                 |
| 1,2-Dichloropropane       | ND               | 10                 |
| Trichloroethene           | ND               | 10                 |
| Bromodichloromethane      | ND               | 10                 |
| cis-1,3-Dichloropropene   | ND               | 10                 |
| 4-Methyl-2-pentanone      | ND               | 500                |
| trans-1,3-Dichloropropene | ND               | 10                 |
| Toluene                   | ND               | 10                 |
| 1,1,2-Trichloroethane     | ND               | 10                 |
| 2-Hexanone                | ND               | 500                |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41695<br>KWB-1A | Reporting<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 10                 |
| Tetrachloroethane           | ND               | 10                 |
| Chlorobenzene               | ND               | 10                 |
| Ethylbenzene                | ND               | 10                 |
| m & p-Xylene                | ND               | 10                 |
| Bromoform                   | ND               | 10                 |
| Styrene                     | ND               | 10                 |
| o-Xylene                    | ND               | 10                 |
| 1,1,2,2-Tetrachloroethane   | ND               | 10                 |
| trans 1,4-Dichloro-2-butene | ND               | 50                 |
| cis 1,4-Dichloro-2-butene   | ND               | 50                 |
| 1,4-Dichlorobenzene         | ND               | 20                 |
| 1,3-Dichlorobenzene         | ND               | 20                 |
| 1,2-Dichlorobenzene         | ND               | 20                 |
| MTBE                        | 147              | 20                 |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 109 |
| toluene-d8           | 99  |
| 4-Bromofluorobenzene | 93  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/29/95  
Analysis Date: 09/29/95  
Sampling Date: 09/21/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41696<br>KWR-1C | Reporting<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 10                 |
| Chloromethane             | ND               | 10                 |
| Vinyl chloride            | ND               | 10                 |
| Bromomethane              | ND               | 50                 |
| Chloroethane              | ND               | 10                 |
| Trichlorofluoromethane    | ND               | 10                 |
| 1,1-Dichloroethene        | ND               | 10                 |
| Iodomethane               | ND               | 50                 |
| Carbon disulfide          | ND               | 10                 |
| Methylene chloride        | ND               | 50                 |
| trans-1,2-Dichloroethene  | ND               | 10                 |
| 1,1-Dichloroethane        | ND               | 10                 |
| Vinyl acetate             | ND               | 10                 |
| 2-Butanone                | ND               | 500                |
| Chloroform                | ND               | 10                 |
| 1,1,1-Trichloroethane     | ND               | 10                 |
| 1,2-Dichloroethane        | ND               | 10                 |
| Benzene                   | 919              | 10                 |
| Carbon Tetrachloride      | ND               | 10                 |
| 1,2-Dichloropropane       | ND               | 10                 |
| Trichloroethene           | ND               | 10                 |
| Bromodichloromethane      | ND               | 10                 |
| cis-1,3-Dichloropropene   | ND               | 10                 |
| 4-Methyl-2-pentanone      | ND               | 500                |
| trans-1,3-Dichloropropene | ND               | 10                 |
| Toluene                   | ND               | 10                 |
| 1,1,2-Trichloroethane     | ND               | 10                 |
| 2-Hexanone                | ND               | 500                |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41696<br>KWB-1C | Reporting<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 10                 |
| Tetrachloroethene           | ND               | 10                 |
| Chlorobenzene               | ND               | 10                 |
| Ethylbenzene                | ND               | 10                 |
| m & p-Xylene                | ND               | 10                 |
| Bromoform                   | ND               | 10                 |
| Styrene                     | ND               | 10                 |
| o-Xylene                    | ND               | 10                 |
| 1,1,2,2-Tetrachloroethane   | ND               | 10                 |
| trans 1,4-Dichloro-2-butene | ND               | 50                 |
| cis 1,4-Dichloro-2-butene   | ND               | 50                 |
| 1,4-Dichlorobenzene         | ND               | 20                 |
| 1,3-Dichlorobenzene         | ND               | 20                 |
| 1,2-Dichlorobenzene         | ND               | 20                 |
| MTRR                        | 139              | 20                 |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 103 |
| Toluene-d8           | 98  |
| 4-Bromofluorobenzene | 85  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
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10-5-95  
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ANALYTICAL RESULTS FOR  
 NAVAJO REFINING COMPANY  
 Attention: Darrell Moore  
 501 E. Main  
 Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
 Receiving Date: 09/23/95  
 Sample Type: water  
 Project No: NA  
 Project Location: Artesia, NM

Prep Date: 09/28/95  
 Analysis Date: 09/28/95  
 Sampling Date: 09/21/95  
 Sample Condition: Intact & Cool  
 Sample Received by: MS  
 Project Name: NA

| EPA 624 Compounds (ug/L)  | T41697<br>MW-45 | Reporting<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 5                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 5                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 5                  |
| trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | ND              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41697<br>MW-45 | Reporting<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | ND              | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |
| MTBE                        | 2               | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 108 |
| Toluene-d8           | 101 |
| 4-Bromofluorobenzene | 98  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
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10-5-95  
\_\_\_\_\_  
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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995

Receiving Date: 09/23/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Prep Date: 09/28/95

Analysis Date: 09/28/95

Sampling Date: 09/20/95

Sample Condition: Intact &amp; Cool

Sample Received by: MS

Project Name: NA

| EPA 624 Compounds (ug/L)  | T41707<br>KWB-2A | Reporting<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 5                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 5                  |
| Carbon disulfide          | ND               | 1                  |
| Methylene chloride        | ND               | 5                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1-Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | ND               | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |

**TRACE ANALYSIS, INC.**

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41707<br>KWB-2A | Reporting<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |
| MTHF                        | ND               | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 114 |
| Toluene-d8           | 102 |
| 4-Bromofluorobenzene | 92  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
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ANALYTICAL RESULTS FOR  
 NAVAJO REFINING COMPANY  
 Attention: Darrell Moore  
 501 E. Main  
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PAGE 1 of 2

October 05, 1995  
 Receiving Date: 09/23/95  
 Sample Type: Water  
 Project No: NA  
 Project Location: Artesia, NM

Prep Date: 09/28/95  
 Analysis Date: 09/28/95  
 Sampling Date: 09/20/95  
 Sample Condition: Intact & Cool  
 Sample Received by: MS  
 Project Name: NA

| EPA 624 Compounds (ug/L)  | T41708<br>KWB-3A | Reporting<br>Limit |
|---------------------------|------------------|--------------------|
| Dichlorodifluoromethane   | ND               | 1                  |
| Chloromethane             | ND               | 1                  |
| Vinyl chloride            | ND               | 1                  |
| Bromomethane              | ND               | 5                  |
| Chloroethane              | ND               | 1                  |
| Trichlorofluoromethane    | ND               | 1                  |
| 1,1-Dichloroethene        | ND               | 1                  |
| Iodomethane               | ND               | 5                  |
| Carbon disulfide          | ND               | 1                  |
| Methylene chloride        | ND               | 5                  |
| trans-1,2-Dichloroethene  | ND               | 1                  |
| 1,1-Dichloroethane        | ND               | 1                  |
| Vinyl acetate             | ND               | 1                  |
| 2-Butanone                | ND               | 50                 |
| Chloroform                | ND               | 1                  |
| 1,1,1 Trichloroethane     | ND               | 1                  |
| 1,2-Dichloroethane        | ND               | 1                  |
| Benzene                   | ND               | 1                  |
| Carbon Tetrachloride      | ND               | 1                  |
| 1,2-Dichloropropane       | ND               | 1                  |
| Trichloroethene           | ND               | 1                  |
| Bromodichloromethane      | ND               | 1                  |
| cis-1,3-Dichloropropene   | ND               | 1                  |
| 4-Methyl-2-pentanone      | ND               | 50                 |
| trans-1,3-Dichloropropene | ND               | 1                  |
| Toluene                   | ND               | 1                  |
| 1,1,2-Trichloroethane     | ND               | 1                  |
| 2-Hexanone                | ND               | 50                 |



# TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41708<br>KWB-3A | Reporting<br>Limit |
|-----------------------------|------------------|--------------------|
| Dibromochloromethane        | ND               | 1                  |
| Tetrachloroethene           | ND               | 1                  |
| Chlorobenzene               | ND               | 1                  |
| Ethylbenzene                | ND               | 1                  |
| m & p-Xylene                | ND               | 1                  |
| Bromoform                   | ND               | 1                  |
| Styrene                     | ND               | 1                  |
| o-Xylene                    | ND               | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND               | 1                  |
| trans 1,4-Dichloro-2-butene | ND               | 5                  |
| cis 1,4-Dichloro-2-butene   | ND               | 5                  |
| 1,4-Dichlorobenzene         | ND               | 2                  |
| 1,3-Dichlorobenzene         | ND               | 2                  |
| 1,2-Dichlorobenzene         | ND               | 2                  |
| MTBE                        | ND               | 2                  |

## SURROGATES

## % RECOVERY

Dibromofluoromethane  
Toluene-d8  
4-Bromofluorobenzene

113  
103  
94

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
\_\_\_\_\_  
Date

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ANALYTICAL RESULTS FOR  
 NAVAJO REFINING COMPANY  
 Attention: Darrell Moore  
 501 E. Main  
 Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
 Receiving Date: 09/23/95  
 Sample Type: Water  
 Project No: NA  
 Project Location: Artesia, NM

Prep Date: 09/28/95  
 Analysis Date: 09/28/95  
 Sampling Date: 09/20/95  
 Sample Condition: Intact & Cool  
 Sample Received by: MS  
 Project Name: NA

| EPA 624 Compounds (ug/L)  | T41709<br>KWB-9 | Reporting<br>Limit |
|---------------------------|-----------------|--------------------|
| Dichlorodifluoromethane   | ND              | 1                  |
| Chloromethane             | ND              | 1                  |
| Vinyl chloride            | ND              | 1                  |
| Bromomethane              | ND              | 5                  |
| Chloroethane              | ND              | 1                  |
| Trichlorofluoromethane    | ND              | 1                  |
| 1,1-Dichloroethene        | ND              | 1                  |
| Iodomethane               | ND              | 5                  |
| Carbon disulfide          | ND              | 1                  |
| Methylene chloride        | ND              | 5                  |
| Trans-1,2-Dichloroethene  | ND              | 1                  |
| 1,1-Dichloroethane        | ND              | 1                  |
| Vinyl acetate             | ND              | 1                  |
| 2-Butanone                | ND              | 50                 |
| Chloroform                | ND              | 1                  |
| 1,1,1-Trichloroethane     | ND              | 1                  |
| 1,2-Dichloroethane        | ND              | 1                  |
| Benzene                   | ND              | 1                  |
| Carbon Tetrachloride      | ND              | 1                  |
| 1,2-Dichloropropane       | ND              | 1                  |
| Trichloroethene           | ND              | 1                  |
| Bromodichloromethane      | ND              | 1                  |
| cis-1,3-Dichloropropene   | ND              | 1                  |
| 4-Methyl-2-pentanone      | ND              | 50                 |
| trans-1,3-Dichloropropene | ND              | 1                  |
| Toluene                   | ND              | 1                  |
| 1,1,2-Trichloroethane     | ND              | 1                  |
| 2-Hexanone                | ND              | 50                 |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41709<br>KWB-9 | Reporting<br>Limit |
|-----------------------------|-----------------|--------------------|
| Dibromochloromethane        | ND              | 1                  |
| Tetrachloroethene           | ND              | 1                  |
| Chlorobenzene               | ND              | 1                  |
| Ethylbenzene                | ND              | 1                  |
| m & p-Xylene                | ND              | 1                  |
| Bromoform                   | ND              | 1                  |
| Styrene                     | ND              | 1                  |
| o-Xylene                    | ND              | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND              | 1                  |
| trans 1,4-Dichloro-2-butene | ND              | 5                  |
| cis 1,4-Dichloro-2-butene   | ND              | 5                  |
| 1,4-Dichlorobenzene         | ND              | 2                  |
| 1,3-Dichlorobenzene         | ND              | 2                  |
| 1,2-Dichlorobenzene         | ND              | 2                  |
| MTRF                        | ND              | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 113 |
| Toluene-d8           | 103 |
| 4-Bromofluorobenzene | 93  |

\*ND = Not Detected

METHODS: EPA 624.



Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95

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ANALYTICAL RESULTS FOR  
NAVAJO REFINING COMPANY  
Attention: Darrell Moore  
501 E. Main  
Artesia, NM 88210

PAGE 1 of 2

October 05, 1995  
Receiving Date: 09/23/95  
Sample Type: Water  
Project No: NA  
Project Location: Artesia, NM

Prep Date: 09/28/95  
Analysis Date: 09/28/95  
Sampling Date: 09/20/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| EPA 624 Compounds (ug/L)  | T41710<br>KWB-11A | Reporting<br>Limit |
|---------------------------|-------------------|--------------------|
| Dichlorodifluoromethane   | ND                | 1                  |
| Chloromethane             | ND                | 1                  |
| Vinyl chloride            | ND                | 1                  |
| Bromomethane              | ND                | 5                  |
| Chloroethane              | ND                | 1                  |
| Trichlorofluoromethane    | ND                | 1                  |
| 1,1-Dichloroethene        | ND                | 1                  |
| Iodomethane               | ND                | 5                  |
| Carbon disulfide          | ND                | 1                  |
| Methylene chloride        | ND                | 5                  |
| trans-1,2-Dichloroethene  | ND                | 1                  |
| 1,1-Dichloroethane        | ND                | 1                  |
| Vinyl acetate             | ND                | 1                  |
| 2-Butanone                | ND                | 50                 |
| Chloroform                | ND                | 1                  |
| 1,1,1-Trichloroethane     | ND                | 1                  |
| 1,2-Dichloroethane        | ND                | 1                  |
| Benzene                   | ND                | 1                  |
| Carbon Tetrachloride      | ND                | 1                  |
| 1,2-Dichloropropane       | ND                | 1                  |
| Trichloroethene           | ND                | 1                  |
| Bromodichloromethane      | ND                | 1                  |
| cis-1,3-Dichloropropene   | ND                | 1                  |
| 4-Methyl-2-pentanone      | ND                | 50                 |
| trans-1,3-Dichloropropene | ND                | 1                  |
| Toluene                   | ND                | 1                  |
| 1,1,2-Trichloroethane     | ND                | 1                  |
| 2-Hexanone                | ND                | 50                 |



TRACE ANALYSIS, INC.

A Laboratory for Advanced Environmental Research and Analysis

NAVAJO REFINING COMPANY  
Project Location: Artesia, NM

PAGE 2 of 2

| EPA 624 Compounds<br>(ug/L) | T41710<br>KWB-11A | Reporting<br>Limit |
|-----------------------------|-------------------|--------------------|
| Dibromochloromethane        | ND                | 1                  |
| Tetrachloroethane           | ND                | 1                  |
| Chlorobenzene               | ND                | 1                  |
| Ethylbenzene                | ND                | 1                  |
| m & p-Xylene                | ND                | 1                  |
| Bromoform                   | ND                | 1                  |
| Styrene                     | ND                | 1                  |
| o-Xylene                    | ND                | 1                  |
| 1,1,2,2-Tetrachloroethane   | ND                | 1                  |
| trans 1,4-Dichloro-2-butene | ND                | 5                  |
| cis 1,4-Dichloro-2-butene   | ND                | 5                  |
| 1,4-Dichlorobenzene         | ND                | 2                  |
| 1,3-Dichlorobenzene         | ND                | 2                  |
| 1,2-Dichlorobenzene         | ND                | 2                  |
| MTBE                        | ND                | 2                  |

## SURROGATES

## % RECOVERY

|                      |     |
|----------------------|-----|
| Dibromofluoromethane | 115 |
| Toluene-d8           | 102 |
| 4-Bromofluorobenzene | 94  |

\*ND = Not Detected

METHODS: EPA 624.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

10-5-95  
\_\_\_\_\_  
Date



# TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424  
Tel (806) 794 1296 Fax (806) 794 1298  
1 (800) 378 1296

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

*Darrell Moore*

Phone #:

FAX #:

Company Name & Address:

*Navajo*

Project #:

Project Name:

Project Location:

*Artesic - Lovington*

Sampler Signature:

*Darrell Moore*

| LAB #<br>(LAB USE ONLY) | FIELD CODE | # CONTAINERS | Volume/Amount | MATRIX |      |     |        | PRESERVATIVE METHOD |      |     |      | SAMPLING |       | TPH | Total Metals Ag As | TCLP Metals Ag As | TCLP Volatiles | TCLP Semi Volatiles | RCI | 8240 / 8260 | 8270 | 624 | Turn around # 0 | Fax ASAP | Hold |  |  |
|-------------------------|------------|--------------|---------------|--------|------|-----|--------|---------------------|------|-----|------|----------|-------|-----|--------------------|-------------------|----------------|---------------------|-----|-------------|------|-----|-----------------|----------|------|--|--|
|                         |            |              |               | WATER  | SOIL | AIR | SLUDGE | HCL                 | HNO3 | ICE | NONE | DATE     | TIME  |     |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-2723    | 2            | 425           | X      |      |     |        | X                   | X    | X   |      | 9/20/95  | 8:00  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-1331    | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 8:15  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-307     | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 8:30  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-4196    | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 8:45  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-4798    | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 9:00  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-314     | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 9:15  | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | RA-313     | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 10:00 | X   |                    |                   |                |                     |     |             |      |     |                 |          |      |  |  |
|                         | KWB-2A     | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 11:30 |     |                    |                   |                |                     |     |             |      |     |                 | X        |      |  |  |
|                         | KWB-3A     | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 13:00 |     |                    |                   |                |                     |     |             |      |     | X               |          |      |  |  |
|                         | KWB-9      | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 13:50 |     |                    |                   |                |                     |     |             |      |     | X               |          |      |  |  |
|                         | KWB-11A    | "            | "             | "      |      |     |        | "                   | "    | "   |      | "        | 15:00 |     |                    |                   |                |                     |     |             |      |     | X               |          |      |  |  |

| Received by:               |  |  |  | Date:   |  |  |  | Time: |  |  |  |
|----------------------------|--|--|--|---------|--|--|--|-------|--|--|--|
| <i>Darrell Moore</i>       |  |  |  | 9/21/95 |  |  |  | 16:30 |  |  |  |
| Relinquished by:           |  |  |  | Date:   |  |  |  | Time: |  |  |  |
|                            |  |  |  |         |  |  |  |       |  |  |  |
| Received at Laboratory by: |  |  |  | Date:   |  |  |  | Time: |  |  |  |
|                            |  |  |  |         |  |  |  |       |  |  |  |

| ANALYSIS REQUEST                     |  |  |  |  |  |  |  |  |  |  |  | SPECIAL HANDLING |  |
|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|------------------|--|
| TPH                                  |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| Total Metals Ag As Ba Cd Cr Pb Hg Se |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| TCLP Metals Ag As Ba Cd Cr Pb Hg Se  |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| TCLP Volatiles                       |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| TCLP Semi Volatiles                  |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| RCI                                  |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| 8240 / 8260                          |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| 8270                                 |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| 624                                  |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| Turn around # of days                |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| Fax ASAP                             |  |  |  |  |  |  |  |  |  |  |  |                  |  |
| Hold                                 |  |  |  |  |  |  |  |  |  |  |  |                  |  |

REMARKS

# TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424  
Tel (806) 794 1296 Fax (806) 794 1298  
1 (800) 378 1296

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Phone #:

FAX #:

Company Name & Address:

Project #:

Project Name:

Project Location:

Sampler Signature:

| LAB #<br>(LAB USE ONLY) | FIELD CODE             | # CONTAINERS | Volume/Amount | MATRIX |      |     |        | PRESERVATIVE METHOD |      |     |      | SAMPLING |       |
|-------------------------|------------------------|--------------|---------------|--------|------|-----|--------|---------------------|------|-----|------|----------|-------|
|                         |                        |              |               | WATER  | SOIL | AIR | SLUDGE | HCL                 | HNO3 | ICE | NONE | DATE     | TIME  |
|                         | KWB-12A                | 2            | 40ml          | X      |      |     |        |                     | X    | X   |      | 9/20/93  | 16:00 |
|                         | MW-18                  | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 17:00 |
|                         | RA-3156                | "            | "             | "      |      |     |        |                     | "    | "   |      | 9/21/93  | 8:00  |
|                         | RA-3353                | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 8:30  |
|                         | KWB-7                  | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 12:30 |
|                         | KWB-1A                 | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 13:30 |
|                         | KWB-1C                 | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 14:00 |
|                         | MW-45                  | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 14:45 |
|                         | RA-1227                | "            | "             | "      |      |     |        |                     | "    | "   |      | "        | 15:00 |
|                         | Lea Refining Boring #3 | "            | "             | "      |      |     |        |                     | "    | "   |      | 9/19/93  | 11:00 |

BTEX, MTBE

Total Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

8240 / 8260

8270

624

Turn around # of days

Fax ASAP

Hold

SPECIAL HANDLING

ANALYSIS REQUEST

REMARKS

Received by: Date: Time:

Received by: Date: Time:

Received at Laboratory by: Date: Time:

Relinquished by: Date: Time:

Relinquished by: Date: Time:

Relinquished by: Date: Time:



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

July 10, 1995

Receiving Date: 07/07/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

Prep Date: 07/10/95

Analysis Date: 07/10/95

Sampling Date: 07/06/95

Sample Condition: Intact & Cool

Sample Received by: LW

Project Name: NA

| TA#    | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|--------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T38436 | RA-2723         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| QC     | Quality Control | 105            | 109               | 110               | 103                         | 298                       |                        |

Reporting Limit

|                       |     |     |     |     |    |   |   |
|-----------------------|-----|-----|-----|-----|----|---|---|
| RPD                   | 8   | 0   | 0   | 0   | 0  | 0 | 0 |
| % Extraction Accuracy | 102 | 104 | 106 | 100 | 97 |   |   |
| % Instrument Accuracy | 105 | 109 | 110 | 103 | 99 |   |   |

METHODS: EPA SW 846-8020, 5030.  
MTBE/BTEX SPIKE AND QC: 100 ug/L BTEX.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

7-10-95

Date

1884519873

740

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

**FAX #:**

Name & Address:  
Nava Jo Refining Co.

**Project Name :**

**Sampler Signature:**[illegible]

**Relinquished by:**

**Times:** 1260

Received by Laboratory: 

|         |                                                                                                                                                                         |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REMARKS |   |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NAV 602.XLS (265)

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue  
Lubbock, Texas 79424

806-794-1296  
ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY  
Attention: Darrell Moore

501 E. Main  
Artesia, NM 88210

July 28, 1995  
Receiving Date: 07/25/95

Sample Type: Water  
Project No: NA

Project Location: Artesia, NM

Prep Date: 07/25/95  
Analysis Date: 07/26/95  
Sampling Date: 07/24/95  
Sample Condition: Intact & Cool  
Sample Received by: MS  
Project Name: NA

| TA#    | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|--------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T38983 | RA-2723         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T38984 | RA-1227         | 1              | <1                | <1                | <1                          | <1                        | <1                     |
| T38985 | RA-1331         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T38986 | RA-307          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T38987 | RA-4196         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T38988 | RA-4798         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T38989 | RA-314          | 99             | 101               | 99                | 104                         | <1                        | <1                     |
| QC     | Quality Control | 1              | 1                 | 1                 | 1                           | 324                       | <1                     |

Reporting Limit

RPD  
\* Extraction Accuracy  
\* Instrument Accuracy

METHODS: EPA SW 846-5030, 8020.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

7-28-95  
Date

# TraceAnalysis, Inc.

6701 Aberdeen Avenue Lubbock, Texas 79424  
Tel (806) 794 1296 Fax (806) 794 1298

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

|                                                                               |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |  |  |  |  |  |  |                                     |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------------------------|--|--|--|--|--|--|--|--|--|-------------------------------------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|
| <b>Project Manager:</b><br>DARRRELL MOORE<br>Phone #: _____ FAX #: _____      |  |  |  |  |  |  |  |  |  | <b>ANALYSIS REQUEST</b>                           |  |  |  |  |  |  |  |  |  | <b>SPECIAL HANDLING</b>             |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |
| <b>Company Name &amp; Address:</b><br>NAMADO REFINING CO.<br>Project #: _____ |  |  |  |  |  |  |  |  |  | Turn around # of days                             |  |  |  |  |  |  |  |  |  | Fax ASAP                            |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |
| <b>Project Location:</b><br>ARIZONA, NM                                       |  |  |  |  |  |  |  |  |  | BTEX, MTBE                                        |  |  |  |  |  |  |  |  |  | TPH                                 |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |
| <b>Sampler Signature:</b><br><i>Darrell Moore</i>                             |  |  |  |  |  |  |  |  |  | TCLP Metals Ag As Ba Cd Cr Pb Hg Se               |  |  |  |  |  |  |  |  |  | TCLP Metals Ag As Ba Cd Cr Pb Hg Se |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |
| <b>Matrix</b><br>WATER SOIL AIR SLUDGE OTHER                                  |  |  |  |  |  |  |  |  |  | <b>Preservative Method</b><br>HNO3 HCL OTHER NONE |  |  |  |  |  |  |  |  |  | TCLP Volatiles                      |  |  |  |  |  |  |  |  |  | TCLP Semi Volatiles          |  |  |  |  |  |  |  |  |  |
| <b>Field Code</b>                                                             |  |  |  |  |  |  |  |  |  | <b># Containers</b>                               |  |  |  |  |  |  |  |  |  | <b>Volume/Amount</b>                |  |  |  |  |  |  |  |  |  | <b>Sampling</b><br>DATE TIME |  |  |  |  |  |  |  |  |  |
| R.O. MOUNT BENEEDLY                                                           |  |  |  |  |  |  |  |  |  | 2                                                 |  |  |  |  |  |  |  |  |  | 10:30                               |  |  |  |  |  |  |  |  |  | 6/9/95                       |  |  |  |  |  |  |  |  |  |
| TANK 417 SLUDGE                                                               |  |  |  |  |  |  |  |  |  | 1                                                 |  |  |  |  |  |  |  |  |  | 14:20                               |  |  |  |  |  |  |  |  |  | 6/9/95                       |  |  |  |  |  |  |  |  |  |
| 4-29-95 SPILL                                                                 |  |  |  |  |  |  |  |  |  | 1                                                 |  |  |  |  |  |  |  |  |  | 14:40                               |  |  |  |  |  |  |  |  |  | 6/9/95                       |  |  |  |  |  |  |  |  |  |
| R.A. 2723                                                                     |  |  |  |  |  |  |  |  |  | 2                                                 |  |  |  |  |  |  |  |  |  | 14:45                               |  |  |  |  |  |  |  |  |  | 6/9/95                       |  |  |  |  |  |  |  |  |  |
| Relinquished by:                                                              |  |  |  |  |  |  |  |  |  | Date:                                             |  |  |  |  |  |  |  |  |  | Times:                              |  |  |  |  |  |  |  |  |  | Received by:                 |  |  |  |  |  |  |  |  |  |
| <i>Darrell Moore</i>                                                          |  |  |  |  |  |  |  |  |  | 8/19/95                                           |  |  |  |  |  |  |  |  |  | 16:30                               |  |  |  |  |  |  |  |  |  | Received by:                 |  |  |  |  |  |  |  |  |  |
| Relinquished by:                                                              |  |  |  |  |  |  |  |  |  | Date:                                             |  |  |  |  |  |  |  |  |  | Times:                              |  |  |  |  |  |  |  |  |  | Received by:                 |  |  |  |  |  |  |  |  |  |
| Relinquished by:                                                              |  |  |  |  |  |  |  |  |  | Date:                                             |  |  |  |  |  |  |  |  |  | Times:                              |  |  |  |  |  |  |  |  |  | Received by:                 |  |  |  |  |  |  |  |  |  |

### REMARKS

NEED TCLP'S ASAP.

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 08/11/95

Analysis Date: 08/11/95

Sampling Date: 08/09/95

Sample Condition: Intact & Cool

Sample Received by: MS

Project Name: NA

August 15, 1995

Receiving Date: 08/10/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

| TA# | Field Code | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|

|        |         |    |    |    |    |    |    |
|--------|---------|----|----|----|----|----|----|
| T39627 | RA-2723 | <1 | <1 | <1 | <1 | <1 | <1 |
|--------|---------|----|----|----|----|----|----|

|    |                 |    |    |     |     |     |  |
|----|-----------------|----|----|-----|-----|-----|--|
| QC | Quality Control | 86 | 98 | 115 | 106 | 325 |  |
|----|-----------------|----|----|-----|-----|-----|--|

Reporting Limit

RPD

|                       |    |    |    |    |    |
|-----------------------|----|----|----|----|----|
| % Extraction Accuracy | 14 | 12 | 12 | 12 | 14 |
|-----------------------|----|----|----|----|----|

|                       |    |     |     |     |     |
|-----------------------|----|-----|-----|-----|-----|
| % Instrument Accuracy | 88 | 100 | 119 | 109 | 111 |
|-----------------------|----|-----|-----|-----|-----|

METHODS: EPA SW 846-5030, 8020.

Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonnell

Date

8-15-95

**6701 Aberdeen Avenue**  
**Tel (806) 794 1296**

**Lubbock, Texas 79424**  
**Fax (806) 794 1298**

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

## Project Manager:

Phone #: 505-748-3311

Darrell Moore

FAX #: 505-748-9077

**Company Name & Address:**

Name & Address: *Navajo Refining Co.*

**Project #:**

**Project Name :**

### Project Location:

**Sampler Signature:**

Sampler Signature: Danell Moore

| LAB #<br>(LAB USE)<br>ONLY | FIELD CODE               | # CONTAINERS | Volume/Amount | MATRIX |      |     |        |       |     | PRESERVATIVE METHOD |     |      |       | SAMPLING |      |
|----------------------------|--------------------------|--------------|---------------|--------|------|-----|--------|-------|-----|---------------------|-----|------|-------|----------|------|
|                            |                          |              |               | WATER  | SOIL | AIR | SLUDGE | OTHER | HCL | HNO3                | ICE | NONE | OTHER | DATE     | TIME |
| 38980                      | Alky Cooling Tower Inlet | 2            | 40ml          | X      |      |     |        |       |     |                     |     | X    | X     | 7/24/95  | 1315 |
| 81                         | " " " Outlet             | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1320 |
| 82                         | RO Reject Bi. Wkly       | "            | "             | "      |      |     |        |       |     |                     |     | X    | X     | "        | 1330 |
| 83                         | RA-2723                  | "            | 90ml          | "      |      |     |        |       |     |                     |     | X    | X     | "        | 1340 |
| 84                         | RA-1227                  | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1350 |
| 85                         | RA-1331                  | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1400 |
| 86                         | RA-307                   | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1410 |
| 87                         | RA-4196                  | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1420 |
| 88                         | RA-4798                  | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1430 |
| 89                         | RA-314                   | "            | "             | "      |      |     |        |       |     |                     |     | "    | "     | "        | 1440 |

**Refinanced by:**

Relinquished by: Daniel Moore

Date: 7/24/95

**Times:**

16:30

Received by:

Relinquished by:

**Relinquished by:**

**Date:**

**Times:**

**Relinquished by:**

**Relinquished by:**

Date: 7-25-95

**Times:**

Received by Laboratory:

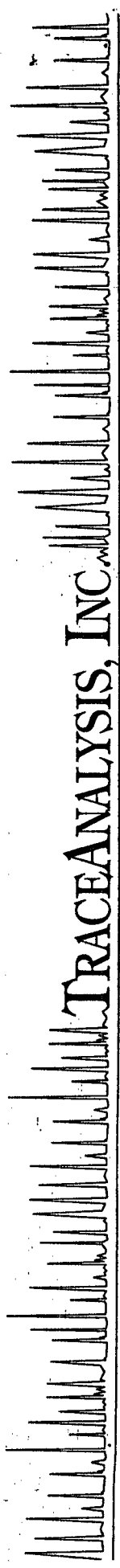
SH  
MS

206A1

206A.I

68110





# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 09/05/95

Analysis Date: 09/05/95

Sampling Date: 08/31/95

Sample Condition: Intact & Cool

Sample Received by: MS

Project Name: NA

September 06, 1995

Receiving Date: 09/01/95

Sample Type: Water

Project No: NA

Project Location: Lovington & Artesia, NM

| TA#    | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|--------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T40637 | RA-313          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40638 | RA-314          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40643 | RA-4196         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40644 | RA-307          | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40645 | RA-1331         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40646 | RA-1227         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T40647 | RA-2723         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| QC     | Quality Control | 99             | 105               | 103               | 99                          | 296                       |                        |

Reporting Limit

RPD

% Extraction Accuracy

% Instrument Accuracy

METHODS: EPA SW 846-5030, 8020.  
BTX SPIKE AND QC: 100 ug/L BTX.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonnell

Date

9-6-95

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 09/09/95

Analysis Date: 09/10/95

Sampling Date: 09/08/95

Sample Condition: Intact & Cool

Sample Received by: MCD

Project Name: NA

September 12, 1995

Receiving Date: 09/09/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ETHYL- M,P,O TOTAL  
BENZENE XYLENE BTEX  
(ug/L) (ug/L) (ug/L)

MTBE BENZENE TOLUENE  
(ug/L) (ug/L) (ug/L)

Field Code

TA#

T41053 RA-2723

QC Quality Control

<1 <1 <1

<1

<1

<1

<1

111

109

107

106

353

Reporting Limit

1

1

1

1

1

RPD

% Extraction Accuracy

% Instrument Accuracy

7

4

1

20

30

108

108

106

106

200

117

111

109

107

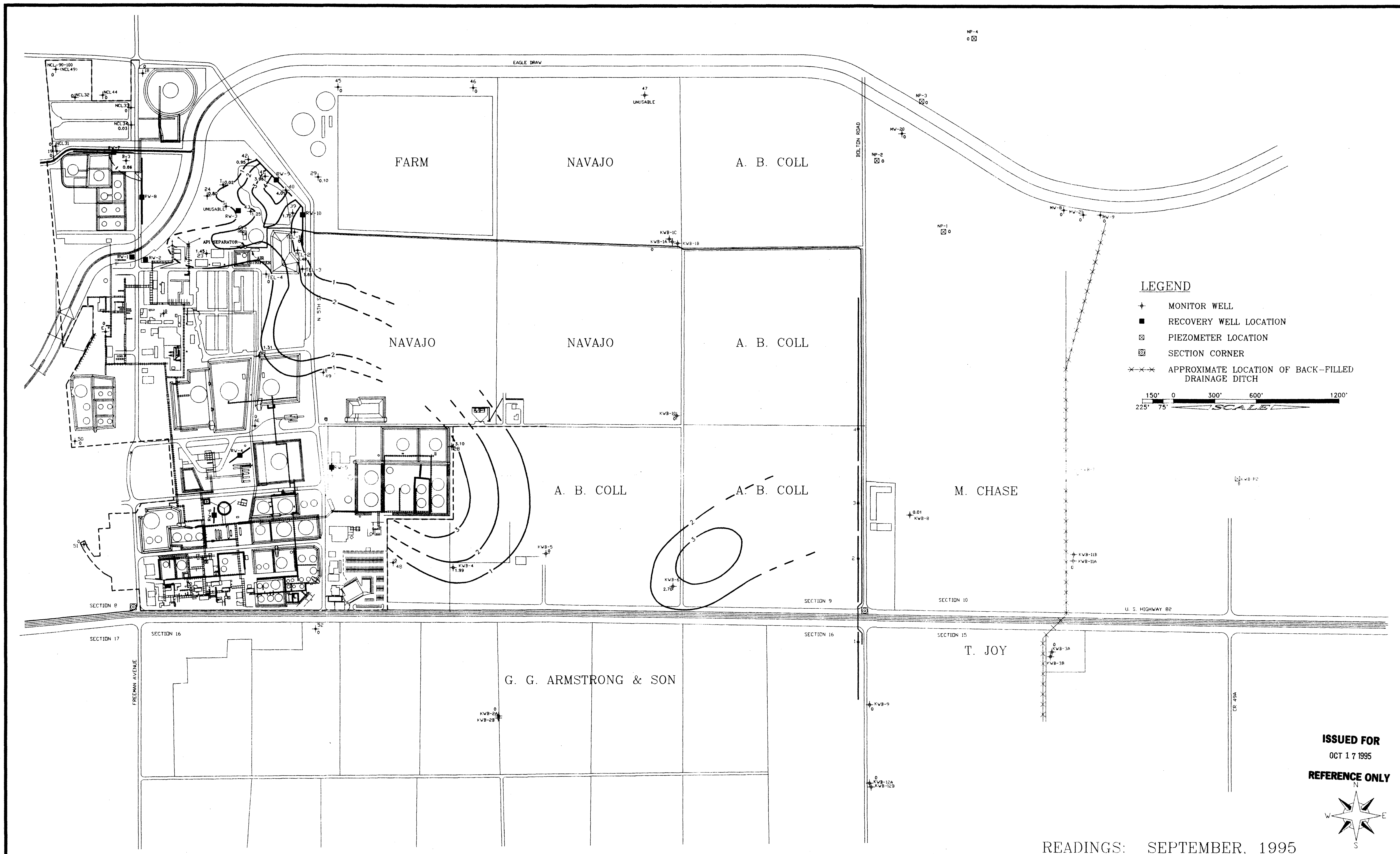
106

METHODS: EPA SW 846-5030, 8020.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

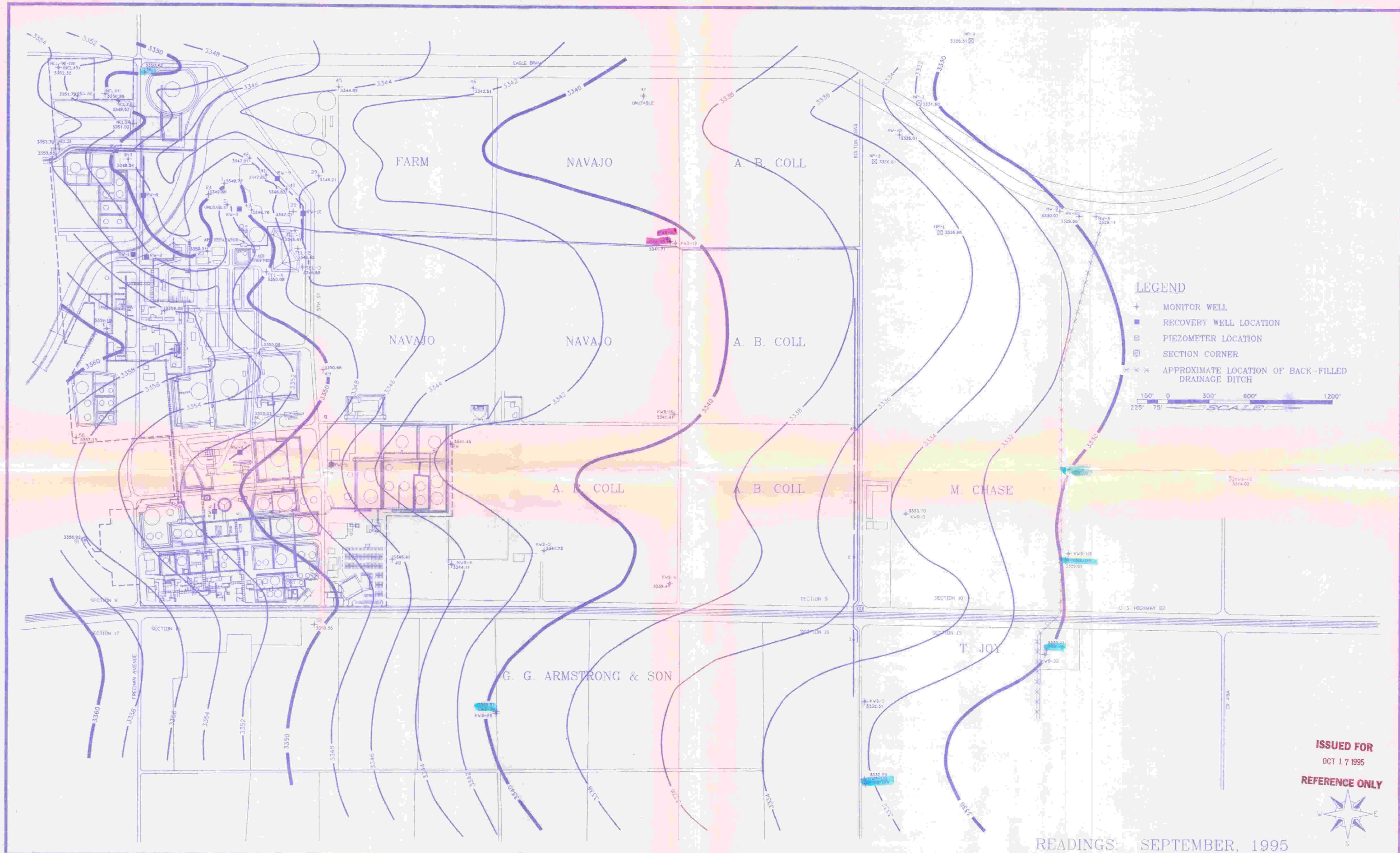
9-12-95



READINGS: SEPTEMBER, 1995

|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|---------|--------------------|-----|-----------|----|-----|----------------|------|------|----------|----------------------------------|------|-----|---------|------|------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NOTES   | REFERENCE DRAWINGS | NO. | REVISIONS | BY | CHK | DATE           | APPR | APPR | NO.      | REVISIONS                        | BY   | CHK | DATE    | APPR | APPR | DRAWING TITLE<br><br>PRODUCT THICKNESS<br>MAP<br>NAVAJO REFINING | <div>NAVAJO REFINING CO.<br/>ENGINEERING DEPARTMENT<br/>P.O. DRAWER 159<br/>ARTESIA, NEW MEXICO</div> |
|         |                    |     |           |    |     |                |      |      | 0        | ISSUED WITH MARCH, 1995 READINGS | PETE | DGJ | 3-7-95  | DGM  | ILS  |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      | 1        | JUNE, 1995 READINGS              | PETE | DGJ | 7-18-95 | DGM  | ILS  |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      | 2        | SEPTEMBER, 1995 READINGS         | PETE | DGJ | 9-11-95 | DGM  | DGJ  |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     |           |    |     |                |      |      |          |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     | DRAWN BY  |    |     | CHK'D BY       |      |      | SCALE    |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
|         |                    |     | PETE      |    |     | DGM            |      |      | AS SHOWN |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
| DATE    |                    |     | APPR BY   |    |     | DRAWING NUMBER |      |      | REV.     |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |
| 3-17-95 |                    |     | ILS       |    |     | 90-45-D        |      |      | 2        |                                  |      |     |         |      |      |                                                                  |                                                                                                                                                                                            |





|       |                    |     |           |    |      |      |       |       |     |           |                                  |      |      |         |       |                                                      |                                                                                                                                                                               |                 |                           |          |
|-------|--------------------|-----|-----------|----|------|------|-------|-------|-----|-----------|----------------------------------|------|------|---------|-------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------|----------|
| NOTES | REFERENCE DRAWINGS | NO. | REVISIONS | BY | CHK. | DATE | APPR. | APPR. | NO. | REVISIONS | BY                               | CHK. | DATE | APPR.   | APPR. | DRAWING TITLE                                        |  NAVAJO REFINING CO.<br>ENGINEERING DEPARTMENT<br>P.O. DRAWER 159<br>ARTESIA, NEW MEXICO |                 |                           |          |
|       |                    |     |           |    |      |      |       |       |     | 0         | ISSUED WITH MARCH, 1995 READINGS | PETE | DGJ  | 3-27-95 | DGM   |                                                      |                                                                                                                                                                               | ILS             |                           |          |
|       |                    |     |           |    |      |      |       |       |     | 1         | JUNE, 1995 READINGS              | PETE | DGJ  | 6-13-95 | DGM   |                                                      |                                                                                                                                                                               | ILS             |                           |          |
|       |                    |     |           |    |      |      |       |       |     | 2         | SEPTEMBER, 1995 READINGS         | PETE | DGJ  | 9-17-95 | DGM   |                                                      |                                                                                                                                                                               | DGJ             |                           |          |
|       |                    |     |           |    |      |      |       |       |     |           |                                  |      |      |         |       |                                                      |                                                                                                                                                                               |                 |                           |          |
|       |                    |     |           |    |      |      |       |       |     |           |                                  |      |      |         |       | GROUNDWATER<br>POTENTIOMETRIC MAP<br>NAVAJO REFINING |                                                                                                                                                                               |                 |                           |          |
|       |                    |     |           |    |      |      |       |       |     |           |                                  |      |      |         |       |                                                      | DRAWN BY<br>PETE                                                                                                                                                              | CHK'D BY<br>DGM | SCALE<br>AS SHOWN         |          |
|       |                    |     |           |    |      |      |       |       |     |           |                                  |      |      |         |       |                                                      | DATE<br>3-17-95                                                                                                                                                               | APPR. BY<br>ILS | DRAWING NUMBER<br>90-44-D | REV<br>2 |





2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

July 31, 1995

**RECEIVED**

**AUG 17 1995**

State of New Mexico  
Energy, Minerals, and Natural Resources Department  
Oil Conservation Division

Environmental Bureau  
Oil Conservation Division

### **Case Narrative**

On July 3, 1995, nineteen water samples were submitted for analysis to Inter-Mountain Laboratories - Farmington, New Mexico. The samples were received intact. The samples were analyzed for parameters requested on the accompanying Analysis Request forms.

Sample ID# KWB-1A froze in our refrigerator before analysis for major cations (calcium, magnesium, sodium and potassium) was performed. Judging from the electrical conductivity, the total dissolved solids, and the cation/anion balance, these values are likely too low. We have since corrected the temperature problem with our refrigerator. I apologize for any inconvenience this may cause you.

It is the policy of this laboratory to employ preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of the samples reported herein are found in U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes," 1983.

If there any questions or comments regarding the analyses, please call me.

Sincerely,

A handwritten signature in cursive script that reads 'Melissa Klute'.

Melissa Klute  
Water Lab Supervisor  
IML - Farmington

Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: KWB-1C  
Laboratory ID: W00988  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1100  
Date Received: 07/03/95

| Parameter                                   | Analytical |          |       |       |
|---------------------------------------------|------------|----------|-------|-------|
|                                             | Result     | Units    | Units |       |
| Lab pH.....                                 | 6.6        | s.u.     |       |       |
| Lab Conductivity @ 25° C.....               | 6,080      | umhos/cm |       |       |
| Total Dissolved Solids @ 180°C.....         | 4,280      | mg/L     |       |       |
| Total Dissolved Solids (Calc).....          | 4,040      | mg/L     |       |       |
| Total Alkalinity as CaCO <sub>3</sub> ..... | 413        | mg/L     |       |       |
| Total Hardness as CaCO <sub>3</sub> .....   | 2,870      | mg/L     |       |       |
|                                             |            |          |       |       |
| Bicarbonate as HCO <sub>3</sub> .....       | 504        | mg/L     | 8.26  | meq/L |
| Carbonate as CO <sub>3</sub> .....          | 0          | mg/L     | 0.00  | meq/L |
| Hydroxide as OH.....                        | 0          | mg/L     | 0.00  | meq/L |
| Chloride.....                               | 325        | mg/L     | 9.18  | meq/L |
| Sulfate.....                                | 2,240      | mg/L     | 46.71 | meq/L |
| Nitrate.....                                | 3.87       | mg/L     | 0.28  | meq/L |
| Nitrite.....                                | <0.01      | mg/L     | <0.01 | meq/L |
|                                             |            |          |       |       |
| Calcium.....                                | 557        | mg/L     | 27.80 | meq/L |
| Magnesium.....                              | 358        | mg/L     | 29.50 | meq/L |
| Potassium.....                              | 1.6        | mg/L     | 0.04  | meq/L |
| Sodium.....                                 | 302        | mg/L     | 13.12 | meq/L |
|                                             |            |          |       |       |
| Cations.....                                |            |          | 70.46 | meq/L |
| Anions.....                                 |            |          | 64.42 | meq/L |
|                                             |            |          |       |       |
| Cation/Anion Difference.....                |            |          | 4.48  | %     |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

**Comments:**

Reported by M Klute

Reviewed by JK

Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: KWB-1C  
Laboratory ID: W00988  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1100  
Date Received: 07/03/95

| Parameter | Total<br>Analytical<br>Result | Units |
|-----------|-------------------------------|-------|
|-----------|-------------------------------|-------|

**Trace Metals**

|                 |         |      |
|-----------------|---------|------|
| Aluminum.....   | 0.11    | mg/L |
| Antimony.....   | < 0.01  | mg/L |
| Arsenic.....    | < 0.005 | mg/L |
| Barium.....     | < 0.5   | mg/L |
| Beryllium.....  | < 0.002 | mg/L |
| Boron.....      | 0.73    | mg/L |
| Cadmium.....    | < 0.002 | mg/L |
| Chromium.....   | < 0.02  | mg/L |
| Cobalt.....     | < 0.05  | mg/L |
| Copper.....     | < 0.01  | mg/L |
| Iron.....       | 3.28    | mg/L |
| Lead.....       | < 0.005 | mg/L |
| Manganese.....  | 0.29    | mg/L |
| Mercury.....    | < 0.001 | mg/L |
| Molybdenum..... | < 0.01  | mg/L |
| Nickel.....     | < 0.01  | mg/L |
| Selenium.....   | < 0.005 | mg/L |
| Silica.....     | 19.9    | mg/L |
| Silver.....     | < 0.01  | mg/L |
| Thallium.....   | < 0.01  | mg/L |
| Vanadium.....   | < 0.01  | mg/L |
| Zinc.....       | < 0.075 | mg/L |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported by M. KluteReviewed by AK

Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: MW-18  
Laboratory ID: W00989  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1145  
Date Received: 07/03/95

| Parameter                                   | Analytical |          |       |       |
|---------------------------------------------|------------|----------|-------|-------|
|                                             | Result     | Units    | Units |       |
| Lab pH.....                                 | 6.7        | s.u.     |       |       |
| Lab Conductivity @ 25° C.....               | 3,800      | umhos/cm |       |       |
| Total Dissolved Solids @ 180°C.....         | 2,590      | mg/L     |       |       |
| Total Dissolved Solids (Calc).....          | 2,110      | mg/L     |       |       |
| Total Alkalinity as CaCO <sub>3</sub> ..... | 454        | mg/L     |       |       |
| Total Hardness as CaCO <sub>3</sub> .....   | 1,760      | mg/L     |       |       |
|                                             |            |          |       |       |
| Bicarbonate as HCO <sub>3</sub> .....       | 554        | mg/L     | 9.08  | meq/L |
| Carbonate as CO <sub>3</sub> .....          | 0          | mg/L     | 0.00  | meq/L |
| Hydroxide as OH.....                        | 0          | mg/L     | 0.00  | meq/L |
| Chloride.....                               | 217        | mg/L     | 6.13  | meq/L |
| Sulfate.....                                | 971        | mg/L     | 20.22 | meq/L |
| Nitrate.....                                | 4.32       | mg/L     | 0.31  | meq/L |
| Nitrite.....                                | <0.01      | mg/L     | <0.01 | meq/L |
|                                             |            |          |       |       |
| Calcium.....                                | 359        | mg/L     | 17.92 | meq/L |
| Magnesium.....                              | 211        | mg/L     | 17.34 | meq/L |
| Potassium.....                              | 2.0        | mg/L     | 0.05  | meq/L |
| Sodium.....                                 | 72         | mg/L     | 3.14  | meq/L |
|                                             |            |          |       |       |
| Cations.....                                |            |          | 38.45 | meq/L |
| Anions.....                                 |            |          | 35.74 | meq/L |
|                                             |            |          |       |       |
| Cation/Anion Difference.....                |            |          | 3.66  | %     |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

**Comments:**

Reported by mkhute

Reviewed by dt



Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: MW-18  
Laboratory ID: W00989  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1145  
Date Received: 07/03/95

| Parameter | Total<br>Analytical<br>Result | Units |
|-----------|-------------------------------|-------|
|-----------|-------------------------------|-------|

**Trace Metals**

|                 |         |      |
|-----------------|---------|------|
| Aluminum.....   | 1.13    | mg/L |
| Antimony.....   | < 0.01  | mg/L |
| Arsenic.....    | < 0.005 | mg/L |
| Barium.....     | < 0.5   | mg/L |
| Beryllium.....  | < 0.002 | mg/L |
| Boron.....      | 0.63    | mg/L |
| Cadmium.....    | < 0.002 | mg/L |
| Chromium.....   | < 0.02  | mg/L |
| Cobalt.....     | < 0.05  | mg/L |
| Copper.....     | < 0.01  | mg/L |
| Iron.....       | 0.80    | mg/L |
| Lead.....       | 0.006   | mg/L |
| Manganese.....  | 0.11    | mg/L |
| Mercury.....    | < 0.001 | mg/L |
| Molybdenum..... | < 0.01  | mg/L |
| Nickel.....     | < 0.01  | mg/L |
| Selenium.....   | < 0.005 | mg/L |
| Silica.....     | 21.9    | mg/L |
| Silver.....     | < 0.01  | mg/L |
| Thallium.....   | < 0.01  | mg/L |
| Vanadium.....   | 0.02    | mg/L |
| Zinc.....       | < 0.075 | mg/L |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported by M. KluteReviewed by AK

Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: MW-45  
Laboratory ID: W00990  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1330  
Date Received: 07/03/95

| Parameter                                   | Analytical |          |       |       |
|---------------------------------------------|------------|----------|-------|-------|
|                                             | Result     | Units    | Units |       |
| Lab pH.....                                 | 6.9        | s.u.     |       |       |
| Lab Conductivity @ 25° C.....               | 9,210      | umhos/cm |       |       |
| Total Dissolved Solids @ 180°C.....         | 6,650      | mg/L     |       |       |
| Total Dissolved Solids (Calc).....          | 5,800      | mg/L     |       |       |
| Total Alkalinity as CaCO <sub>3</sub> ..... | 251        | mg/L     |       |       |
| Total Hardness as CaCO <sub>3</sub> .....   | 3,300      | mg/L     |       |       |
| Bicarbonate as HCO <sub>3</sub> .....       | 306        | mg/L     | 5.02  | meq/L |
| Carbonate as CO <sub>3</sub> .....          | 0          | mg/L     | 0.00  | meq/L |
| Hydroxide as OH.....                        | 0          | mg/L     | 0.00  | meq/L |
| Chloride.....                               | 972        | mg/L     | 27.42 | meq/L |
| Sulfate.....                                | 3,040      | mg/L     | 63.42 | meq/L |
| Nitrate.....                                | 6.58       | mg/L     | 0.47  | meq/L |
| Nitrite.....                                | <0.01      | mg/L     | <0.01 | meq/L |
| Calcium.....                                | 671        | mg/L     | 33.50 | meq/L |
| Magnesium.....                              | 394        | mg/L     | 32.40 | meq/L |
| Potassium.....                              | 13         | mg/L     | 0.32  | meq/L |
| Sodium.....                                 | 547        | mg/L     | 23.80 | meq/L |
| Cations.....                                |            |          | 90.02 | meq/L |
| Anions.....                                 |            |          | 96.33 | meq/L |
| Cation/Anion Difference.....                |            |          | 3.39  | %     |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

**Comments:**

Reported by meute

Reviewed by df

Client: **NM-OCD**  
Project: Navajo Refinery  
Sample ID: MW-45  
Laboratory ID: W00990  
Sample Matrix: Water  
Condition: Cool/Intact

Date Reported: 07/30/95  
Date Sampled: 06/29/95  
Time Sampled: 1330  
Date Received: 07/03/95

| Parameter | Total             | Units |
|-----------|-------------------|-------|
|           | Analytical Result |       |

**Trace Metals**

|                 |         |      |
|-----------------|---------|------|
| Aluminum.....   | 1.73    | mg/L |
| Antimony.....   | < 0.01  | mg/L |
| Arsenic.....    | < 0.005 | mg/L |
| Barium.....     | < 0.5   | mg/L |
| Beryllium.....  | < 0.002 | mg/L |
| Boron.....      | 0.37    | mg/L |
| Cadmium.....    | < 0.002 | mg/L |
| Chromium.....   | < 0.02  | mg/L |
| Cobalt.....     | < 0.05  | mg/L |
| Copper.....     | < 0.01  | mg/L |
| Iron.....       | 1.31    | mg/L |
| Lead.....       | 0.010   | mg/L |
| Manganese.....  | 0.44    | mg/L |
| Mercury.....    | < 0.001 | mg/L |
| Molybdenum..... | < 0.01  | mg/L |
| Nickel.....     | 0.03    | mg/L |
| Selenium.....   | < 0.005 | mg/L |
| Silica.....     | 27.9    | mg/L |
| Silver.....     | < 0.01  | mg/L |
| Thallium.....   | < 0.01  | mg/L |
| Vanadium.....   | < 0.01  | mg/L |
| Zinc.....       | < 0.075 | mg/L |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported by M KluteReviewed by dr

Client: **NM-OCD**  
 Project: Navajo Refinery  
 Sample ID: KWB-1A  
 Laboratory ID: W00991  
 Sample Matrix: Water  
 Condition: Cool/Intact

Date Reported: 07/30/95  
 Date Sampled: 06/28/95  
 Time Sampled: 1520  
 Date Received: 07/03/95

| Parameter                                   | Analytical |          |        |       |
|---------------------------------------------|------------|----------|--------|-------|
|                                             | Result     | Units    |        | Units |
| Lab pH.....                                 | 6.7        | s.u.     |        |       |
| Lab Conductivity @ 25° C.....               | 6,430      | umhos/cm |        |       |
| Total Dissolved Solids @ 180°C.....         | 4,720      | mg/L     |        |       |
| Total Dissolved Solids (Calc).....          | 4,150      | mg/L     |        |       |
| Total Alkalinity as CaCO <sub>3</sub> ..... | 504        | mg/L     |        |       |
| Total Hardness as CaCO <sub>3</sub> .....   | 2,310      | mg/L     |        |       |
| Bicarbonate as HCO <sub>3</sub> .....       | 615        | mg/L     | 10.08  | meq/L |
| Carbonate as CO <sub>3</sub> .....          | 0          | mg/L     | 0.00   | meq/L |
| Hydroxide as OH.....                        | 0          | mg/L     | 0.00   | meq/L |
| Chloride.....                               | 328        | mg/L     | 9.25   | meq/L |
| Sulfate.....                                | 2,540      | mg/L     | 52.91  | meq/L |
| Nitrate.....                                | 3.96       | mg/L     | 0.28   | meq/L |
| Nitrite.....                                | <0.01      | mg/L     | <0.01  | meq/L |
| *Calcium.....                               | 433        | mg/L     | 21.60  | meq/L |
| *Magnesium.....                             | 299        | mg/L     | 24.60  | meq/L |
| *Potassium.....                             | 1.2        | mg/L     | 0.03   | meq/L |
| *Sodium.....                                | 244        | mg/L     | 10.60  | meq/L |
| Cations.....                                |            |          | *56.83 | meq/L |
| Anions.....                                 |            |          | 72.53  | meq/L |
| Cation/Anion Difference.....                |            |          | *12.1  | %     |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
 "Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

**Comments:** \*Sample froze before these parameters were analyzed, these values are likely low.

Reported by m Klute

Reviewed by dt

EPA METHOD 8100  
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: NEW MEXICO-OIL CONSERVATION DIVISION

Sample ID: KWB-1C

Project ID: Navajo Refinery

Laboratory ID: B955131 W988

Sample Matrix: Water

Date Reported: 08/14/95

Date Sampled: 06/29/95

Date Received: 07/05/95

Date Extracted: 07/05/95

Date Analyzed: 07/18/95

| Parameter                  | Analytical Result | Detection Limit | Units |
|----------------------------|-------------------|-----------------|-------|
| 3-Methylcholanthrene       | ND                | 2               | ug/L  |
| 7H-Dibenzo(c,g)carbazole   | ND                | 2               | ug/L  |
| Acenaphthene               | 2.3               | 2               | ug/L  |
| Acenaphthylene             | ND                | 2               | ug/L  |
| Anthracene                 | ND                | 2               | ug/L  |
| Benzo(a)anthracene         | ND                | 2               | ug/L  |
| Benzo(a)pyrene             | ND                | 2               | ug/L  |
| Benzo(b)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(g,h,i)perylene       | 10                | 2               | ug/L  |
| Benzo(j)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(k)fluoranthene *     | ND                | 2               | ug/L  |
| Chrysene                   | ND                | 2               | ug/L  |
| Dibenz(a,h)acridine        | ND                | 2               | ug/L  |
| Dibenz(a,h)anthracene **   | ND                | 2               | ug/L  |
| Dibenz(a,j)acridine        | ND                | 2               | ug/L  |
| Dibenzo(a,e)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,h)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,i)pyrene         | ND                | 2               | ug/L  |
| Fluoranthene               | ND                | 2               | ug/L  |
| Fluorene                   | ND                | 2               | ug/L  |
| Indeno(1,2,3-c,d)pyrene ** | ND                | 2               | ug/L  |
| Naphthalene                | 11                | 2               | ug/L  |
| Phenanthrene               | ND                | 2               | ug/L  |
| Pyrene                     | ND                | 2               | ug/L  |

\* - Compounds Coelute

\*\* - Compounds Coelute

ND - Compound not detected at stated Detection Limit.

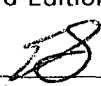
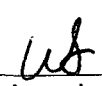
B - Compound detected in Method Blank.

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 58 |
| Terphenyl            | 55 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
Analyst  
Reviewed

EPA METHOD 8100  
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: NEW MEXICO-OIL CONSERVATION DIVISION

|                |                 |                 |          |
|----------------|-----------------|-----------------|----------|
| Sample ID:     | MW-18           | Date Reported:  | 08/14/95 |
| Project ID:    | Navajo Refinery | Date Sampled:   | 06/29/95 |
| Laboratory ID: | B955132 W989    | Date Received:  | 07/05/95 |
| Sample Matrix: | Water           | Date Extracted: | 07/05/95 |
|                |                 | Date Analyzed:  | 07/18/95 |

| Parameter                  | Analytical Result | Detection Limit | Units |
|----------------------------|-------------------|-----------------|-------|
| 3-Methylcholanthrene       | ND                | 2               | ug/L  |
| 7H-Dibenzo(c,g)carbazole   | ND                | 2               | ug/L  |
| Acenaphthene               | ND                | 2               | ug/L  |
| Acenaphthylene             | ND                | 2               | ug/L  |
| Anthracene                 | ND                | 2               | ug/L  |
| Benzo(a)anthracene         | ND                | 2               | ug/L  |
| Benzo(a)pyrene             | ND                | 2               | ug/L  |
| Benzo(b)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(g,h,i)perylene       | 10                | 2               | ug/L  |
| Benzo(j)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(k)fluoranthene *     | ND                | 2               | ug/L  |
| Chrysene                   | ND                | 2               | ug/L  |
| Dibenz(a,h)acridine        | ND                | 2               | ug/L  |
| Dibenz(a,h)anthracene **   | ND                | 2               | ug/L  |
| Dibenz(a,j)acridine        | ND                | 2               | ug/L  |
| Dibenzo(a,e)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,h)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,i)pyrene         | ND                | 2               | ug/L  |
| Fluoranthene               | ND                | 2               | ug/L  |
| Fluorene                   | ND                | 2               | ug/L  |
| Indeno(1,2,3-c,d)pyrene ** | ND                | 2               | ug/L  |
| Naphthalene                | ND                | 2               | ug/L  |
| Phenanthrene               | ND                | 2               | ug/L  |
| Pyrene                     | ND                | 2               | ug/L  |

\* - Compounds Coelute

\*\* - Compounds Coelute

ND - Compound not detected at stated Detection Limit.

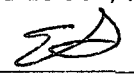
B - Compound detected in Method Blank.

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 62 |
| Terphenyl            | 57 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
 Analyst

  
 Reviewed

EPA METHOD 8100  
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: NEW MEXICO-OIL CONSERVATION DIVISION

Sample ID: NW-45

Project ID: Navajo Refinery

Laboratory ID: B955133 W990

Sample Matrix: Water

Date Reported: 08/14/95

Date Sampled: 06/29/95

Date Received: 07/05/95

Date Extracted: 07/05/95

Date Analyzed: 07/18/95

| Parameter                  | Analytical Result | Detection Limit | Units |
|----------------------------|-------------------|-----------------|-------|
| 3-Methylcholanthrene       | ND                | 2               | ug/L  |
| 7H-Dibenzo(c,g)carbazole   | ND                | 2               | ug/L  |
| Acenaphthene               | ND                | 2               | ug/L  |
| Acenaphthylene             | 9.5               | 2               | ug/L  |
| Anthracene                 | ND                | 2               | ug/L  |
| Benzo(a)anthracene         | ND                | 2               | ug/L  |
| Benzo(a)pyrene             | ND                | 2               | ug/L  |
| Benzo(b)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(g,h,i)perylene       | 7.8               | 2               | ug/L  |
| Benzo(j)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(k)fluoranthene *     | ND                | 2               | ug/L  |
| Chrysene                   | ND                | 2               | ug/L  |
| Dibenz(a,h)acridine        | ND                | 2               | ug/L  |
| Dibenz(a,h)anthracene **   | ND                | 2               | ug/L  |
| Dibenz(a,j)acridine        | ND                | 2               | ug/L  |
| Dibenzo(a,e)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,h)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,i)pyrene         | ND                | 2               | ug/L  |
| Fluoranthene               | 7.4               | 2               | ug/L  |
| Fluorene                   | ND                | 2               | ug/L  |
| Indeno(1,2,3-c,d)pyrene ** | ND                | 2               | ug/L  |
| Naphthalene                | ND                | 2               | ug/L  |
| Phenanthrene               | ND                | 2               | ug/L  |
| Pyrene                     | 3.0               | 2               | ug/L  |

\* - Compounds Coelute

\*\* - Compounds Coelute

ND - Compound not detected at stated Detection Limit.

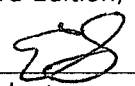
B - Compound detected in Method Blank.

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 64 |
| Terphenyl            | 66 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
Analyst  
Reviewed

EPA METHOD 8100  
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: NEW MEXICO-OIL CONSERVATION DIVISION

Sample ID: KWB-1A

Date Reported: 08/14/95

Project ID: Navajo Refinery

Date Sampled: 06/28/95

Laboratory ID: B955134 W991

Date Received: 07/05/95

Sample Matrix: Water

Date Extracted: 07/05/95

Date Analyzed: 07/18/95

| Parameter                  | Analytical Result | Detection Limit | Units |
|----------------------------|-------------------|-----------------|-------|
| 3-Methylcholanthrene       | ND                | 2               | ug/L  |
| 7H-Dibenzo(c,g)carbazole   | ND                | 2               | ug/L  |
| Acenaphthene               | 2.4               | 2               | ug/L  |
| Acenaphthylene             | ND                | 2               | ug/L  |
| Anthracene                 | ND                | 2               | ug/L  |
| Benzo(a)anthracene         | ND                | 2               | ug/L  |
| Benzo(a)pyrene             | ND                | 2               | ug/L  |
| Benzo(b)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(g,h,i)perylene       | 5.5               | 2               | ug/L  |
| Benzo(j)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(k)fluoranthene *     | ND                | 2               | ug/L  |
| Chrysene                   | ND                | 2               | ug/L  |
| Dibenz(a,h)acridine        | ND                | 2               | ug/L  |
| Dibenz(a,h)anthracene **   | ND                | 2               | ug/L  |
| Dibenz(a,j)acridine        | ND                | 2               | ug/L  |
| Dibenzo(a,e)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,h)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,i)pyrene         | ND                | 2               | ug/L  |
| Fluoranthene               | ND                | 2               | ug/L  |
| Fluorene                   | 5.2               | 2               | ug/L  |
| Indeno(1,2,3-c,d)pyrene ** | ND                | 2               | ug/L  |
| Naphthalene                | 20                | 2               | ug/L  |
| Phenanthrene               | ND                | 2               | ug/L  |
| Pyrene                     | ND                | 2               | ug/L  |

\* - Compounds Coelute

\*\* - Compounds Coelute

ND - Compound not detected at stated Detection Limit.

B - Compound detected in Method Blank.

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 68 |
| Terphenyl            | 67 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
Analyst  
Reviewed



## **QUALITY ASSURANCE / QUALITY CONTROL**

LAB QA/QC  
POLYNUCLEAR AROMATIC HYDROCARBONS - 8100  
METHOD BLANKDate Analyzed: 07/18/95  
Laboratory ID: MB95-186  
Sample Matrix: Water  
Date Extracted: 07/05/95

| Parameter                  | Analytical Result | Detection Limit | Units |
|----------------------------|-------------------|-----------------|-------|
| 3-Methylcholanthrene       | ND                | 2               | ug/L  |
| 7H-Dibenzo(c,g)carbazole   | ND                | 2               | ug/L  |
| Acenaphthene               | ND                | 2               | ug/L  |
| Acenaphthylene             | ND                | 2               | ug/L  |
| Anthracene                 | ND                | 2               | ug/L  |
| Benzo(a)anthracene         | ND                | 2               | ug/L  |
| Benzo(a)pyrene             | ND                | 2               | ug/L  |
| Benzo(b)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(g,h,i)perylene       | ND                | 2               | ug/L  |
| Benzo(j)fluoranthene *     | ND                | 2               | ug/L  |
| Benzo(k)fluoranthene *     | ND                | 2               | ug/L  |
| Chrysene                   | ND                | 2               | ug/L  |
| Dibenz(a,h)acridine        | ND                | 2               | ug/L  |
| Dibenz(a,h)anthracene **   | ND                | 2               | ug/L  |
| Dibenz(a,j)acridine        | ND                | 2               | ug/L  |
| Dibenzo(a,e)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,h)pyrene         | ND                | 2               | ug/L  |
| Dibenzo(a,i)pyrene         | ND                | 2               | ug/L  |
| Fluoranthene               | ND                | 2               | ug/L  |
| Fluorene                   | ND                | 2               | ug/L  |
| Indeno(1,2,3-c,d)pyrene ** | ND                | 2               | ug/L  |
| Naphthalene                | ND                | 2               | ug/L  |
| Phenanthrene               | ND                | 2               | ug/L  |
| Pyrene                     | ND                | 2               | ug/L  |

\* - Compounds Coelute

\*\* - Compounds Coelute

ND - Compound not detected at stated Detection Limit.

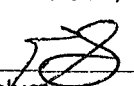
B - Compound detected in Method Blank.

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 82 |
| Terphenyl            | 44 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
Analyst  
Reviewed

LAB QA/QC  
POLYNUCLEAR AROMATIC HYDROCARBONS - 8100  
BLANK SPIKEDate Analyzed: 07/18/95  
Laboratory ID: BSD95-186  
Sample Matrix: Water  
Date Extracted: 07/05/95

## ORIGINAL SAMPLE PARAMETERS

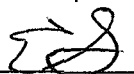
| Parameter                  | Spike Added (ug) | Sample Conc. (ug) | MS Conc. (ug) | MS Recovery (%) |
|----------------------------|------------------|-------------------|---------------|-----------------|
| Acenaphthene               | 100              | 0                 | 67            | 67              |
| Acenaphthylene             | 100              | 0                 | 65            | 65              |
| Anthracene                 | 100              | 0                 | 87            | 87              |
| Benzo(a)anthracene         | 10               | 0                 | 7.4           | 74              |
| Benzo(b)fluoranthene *     |                  |                   |               |                 |
| Benzo(k)fluoranthene *     | 15               | 0                 | 11            | 73              |
| Chrysene                   | 10               | 0                 | 7.6           | 76              |
| Dibenzo(a,h)anthracene **  |                  |                   |               |                 |
| Indeno(1,2,3-c,d)pyrene ** | 20               | 0                 | 15            | 75              |
| Fluorene                   | 100              | 0                 | 71            | 71              |
| Naphthalene                | 100              | 0                 | 64            | 64              |
| Phenanthrene               | 100              | 0                 | 76            | 76              |

## DUPLICATE SAMPLE PARAMETERS

| Parameter                  | Spike Added (ug) | MSD Conc. (ug) | MSD Recovery (%) | RPD (%) |
|----------------------------|------------------|----------------|------------------|---------|
| Acenaphthene               | 100              | 73             | 73               | 9       |
| Acenaphthylene             | 100              | 70             | 70               | 7       |
| Anthracene                 | 100              | 92             | 92               | 6       |
| Benzo(a)anthracene         | 10               | 7.8            | 78               | 5       |
| Benzo(b)fluoranthene *     |                  |                |                  |         |
| Benzo(k)fluoranthene *     | 15               | 12             | 80               | 9       |
| Chrysene                   | 10               | 7.9            | 79               | 4       |
| Dibenzo(a,h)anthracene **  |                  |                |                  |         |
| Indeno(1,2,3-c,d)pyrene ** | 20               | 15             | 75               | 0       |
| Fluorene                   | 100              | 75             | 75               | 5       |
| Naphthalene                | 100              | 70             | 70               | 9       |
| Phenanthrene               | 100              | 80             | 80               | 5       |

\* - Compounds Coelute

\*\* - Compounds Coelute

  
\_\_\_\_\_  
Analyst  
\_\_\_\_\_  
Reviewed

LAB QA/QC  
POLYNUCLEAR AROMATIC HYDROCARBONS - 8100  
MATRIX SPIKE

Date Analyzed: 07/18/95  
Laboratory ID: B955132  
Sample Matrix: Water  
Date Extracted: 07/05/95

| Parameter                  | Expected<br>Conc.<br>(ug/L) | Found<br>Conc.<br>(ug/L) | Recovery<br>(%) |
|----------------------------|-----------------------------|--------------------------|-----------------|
| Acenaphthene               | 100                         | 54                       | 54              |
| Acenaphthylene             | 100                         | 51                       | 51              |
| Anthracene                 | 100                         | 65                       | 65              |
| Benzo(a)anthracene         | 10                          | 5.5                      | 55              |
| Benzo(b)fluoranthene *     |                             |                          |                 |
| Benzo(k)fluoranthene *     | 15                          | 8.4                      | 56              |
| Chrysene                   | 10                          | 5.5                      | 55              |
| Dibenzo(a,h)anthracene **  |                             |                          |                 |
| Indeno(1,2,3-c,d)pyrene ** | 20                          | 12                       | 60              |
| Fluorene                   | 100                         | 55                       | 55              |
| Naphthalene                | 100                         | 46                       | 46              |
| Phenanthrene               | 100                         | 57                       | 57              |

\* - Compounds Coelute

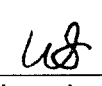
\*\* - Compounds Coelute

## QUALITY CONTROL:

| Surrogate Recoveries | %  |
|----------------------|----|
| 2-Fluorobiphenyl     | 68 |
| Terphenyl-d14        | 56 |

## Reference:

Method 8100, Polynuclear Aromatic Hydrocarbon (PAH). Determination of Organic Analytes by Gas Chromatographic Methods, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

  
Analyst  
Reviewed

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-307  
Project ID: Navajo Refinery  
Lab ID: B955139  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-307  
Project ID: Navajo Refinery  
Lab ID: B955139  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 96  | 76 - 114  |
| Bromofluorobenzene                   | 110 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-1331  
Project ID: Navajo Refinery  
Lab ID: B955140  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-1331  
Project ID: Navajo Refinery  
Lab ID: B955140  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

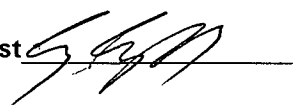
| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 99  | 76 - 114  |
| Bromofluorobenzene                   | 101 | 86 - 115  |
| Toluene-d8                           | 97  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed





EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-4196  
Project ID: Navajo Refinery  
Lab ID: B955141  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-4196  
Project ID: Navajo Refinery  
Lab ID: B955141  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter | Result | PQL | Units |
|-----------|--------|-----|-------|
|-----------|--------|-----|-------|

Continued

|                |    |     |      |
|----------------|----|-----|------|
| Vinyl Chloride | ND | 5.0 | ug/L |
|----------------|----|-----|------|

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 97  | 76 - 114  |
| Bromofluorobenzene                   | 108 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-4798  
Project ID: Navajo Refinery  
Lab ID: B955142  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-4798  
Project ID: Navajo Refinery  
Lab ID: B955142  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

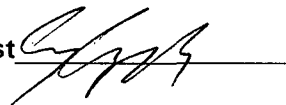
| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 99  | 76 - 114  |
| Bromofluorobenzene                   | 106 | 86 - 115  |
| Toluene-d8                           | 99  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-1227  
Project ID: Navajo Refinery  
Lab ID: B955143  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-1227  
Project ID: Navajo Refinery  
Lab ID: B955143  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 100 | 76 - 114  |
| Bromofluorobenzene                   | 104 | 86 - 115  |
| Toluene-d8                           | 101 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-313  
Project ID: Navajo Refinery  
Lab ID: B955144  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-313  
Project ID: Navajo Refinery  
Lab ID: B955144  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 99  | 76 - 114  |
| Bromofluorobenzene                   | 104 | 86 - 115  |
| Toluene-d8                           | 99  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-2723  
Project ID: Navajo Refinery  
Lab ID: B955145  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-2723  
Project ID: Navajo Refinery  
Lab ID: B955145  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

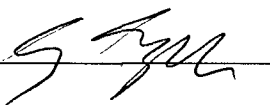
| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 100 | 76 - 114  |
| Bromofluorobenzene                   | 101 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-3353  
Project ID: Navajo Refinery  
Lab ID: B955146  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-3353  
Project ID: Navajo Refinery  
Lab ID: B955146  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 103 | 76 - 114  |
| Bromofluorobenzene                   | 100 | 86 - 115  |
| Toluene-d8                           | 95  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-3156  
Project ID: Navajo Refinery  
Lab ID: B955147  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: RA-3156  
Project ID: Navajo Refinery  
Lab ID: B955147  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

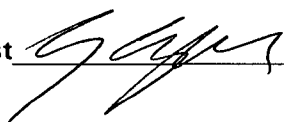
| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 106 | 76 - 114  |
| Bromofluorobenzene                   | 103 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-9  
Project ID: Navajo Refinery  
Lab ID: B955148  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| Chloromethane             | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Vinyl Chloride            | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | 7.2    | 5.0 | ug/L  |
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-9  
Project ID: Navajo Refinery  
Lab ID: B955148  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/10/95

| Parameter                            | Result | PQL       | Units |
|--------------------------------------|--------|-----------|-------|
| Continued                            |        |           |       |
| 1,4-Dichlorobenzene                  | ND     | 5.0       | ug/L  |
|                                      |        |           |       |
| QUALITY CONTROL - Surrogate Recovery | %      | QC Limits |       |
| -----                                |        |           |       |
| 1,2-Dichloroethane-d4                | 100    | 76 - 114  |       |
| Toluene-d8                           | 99     | 88 - 110  |       |
| Bromofluorobenzene                   | 100    | 86 - 115  |       |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed





EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-7  
Project ID: Navajo Refinery  
Lab ID: B955149  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-7  
Project ID: Navajo Refinery  
Lab ID: B955149  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 94  | 76 - 114  |
| Bromofluorobenzene                   | 114 | 86 - 115  |
| Toluene-d8                           | 101 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-3A  
Project ID: Navajo Refinery  
Lab ID: B955150  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-3A  
Project ID: Navajo Refinery  
Lab ID: B955150  
Matrix: Water

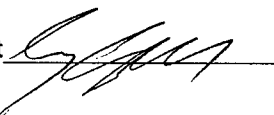
Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                            | Result | PQL       | Units |
|--------------------------------------|--------|-----------|-------|
| Continued                            |        |           |       |
| Vinyl Chloride                       | ND     | 5.0       | ug/L  |
|                                      |        |           |       |
| QUALITY CONTROL - Surrogate Recovery | %      | QC Limits |       |
| -----                                |        |           |       |
| 1,2-Dichloroethane-d4                | 100    | 76 - 114  |       |
| Bromofluorobenzene                   | 109    | 86 - 115  |       |
| Toluene-d8                           | 99     | 88 - 110  |       |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



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EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-2A  
Project ID: Navajo Refinery  
Lab ID: B955151  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-2A  
Project ID: Navajo Refinery  
Lab ID: B955151  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/28/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 96  | 76 - 114  |
| Bromofluorobenzene                   | 109 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-12A  
Project ID: Navajo Refinery  
Lab ID: B955152  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-12A  
Project ID: Navajo Refinery  
Lab ID: B955152  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 95  | 76 - 114  |
| Bromofluorobenzene                   | 109 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed





EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-11A  
Project ID: Navajo Refinery  
Lab ID: B955153  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-11A  
Project ID: Navajo Refinery  
Lab ID: B955153  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 98  | 76 - 114  |
| Bromofluorobenzene                   | 110 | 86 - 115  |
| Toluene-d8                           | 100 | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
 Sample ID: KWB-1C  
 Project ID: Navajo Refinery  
 Lab ID: B955154  
 Matrix: Water

Date Reported: 07/18/95  
 Date Sampled: 06/29/95  
 Date Received: 07/06/95  
 Date Extracted: NA  
 Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | 1900   | 250 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-1C  
Project ID: Navajo Refinery  
Lab ID: B955154  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 103 | 76 - 114  |
| Bromofluorobenzene                   | 108 | 86 - 115  |
| Toluene-d8                           | 98  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst SGM

Reviewed us

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: MW-18  
Project ID: Navajo Refinery  
Lab ID: B955155  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: MW-18  
Project ID: Navajo Refinery  
Lab ID: B955155  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

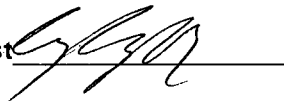
| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 99  | 76 - 114  |
| Bromofluorobenzene                   | 109 | 86 - 115  |
| Toluene-d8                           | 99  | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: MW-45  
Project ID: Navajo Refinery  
Lab ID: B955156  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Benzene                   | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| Chloromethane             | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: MW-45  
Project ID: Navajo Refinery  
Lab ID: B955156  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

| Parameter      | Result | PQL | Units |
|----------------|--------|-----|-------|
| Continued      |        |     |       |
| Vinyl Chloride | ND     | 5.0 | ug/L  |

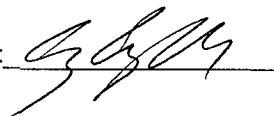
| QUALITY CONTROL - Surrogate Recovery | %     | QC Limits |
|--------------------------------------|-------|-----------|
| 1,2-Dichloroethane-d4                | 102   | 76 - 114  |
| Bromofluorobenzene                   | 167 # | 86 - 115  |
| Toluene-d8                           | 100   | 88 - 110  |

ND - Not Detected at Practical Quantitation Level (PQL).

# - Surrogate Recovery not within control limits.

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed





EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
 Sample ID: KWB-1A  
 Project ID: Navajo Refinery  
 Lab ID: B955157  
 Matrix: Water

Date Reported: 07/18/95  
 Date Sampled: 06/29/95  
 Date Received: 07/06/95  
 Date Extracted: NA  
 Date Analyzed: 07/11/95

| Parameter                 | Result | PQL | Units |
|---------------------------|--------|-----|-------|
| Chloromethane             | ND     | 5.0 | ug/L  |
| Bromomethane              | ND     | 5.0 | ug/L  |
| Vinyl Chloride            | ND     | 5.0 | ug/L  |
| Chloroethane              | ND     | 5.0 | ug/L  |
| Methylene chloride        | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane    | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene        | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane        | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene  | ND     | 5.0 | ug/L  |
| Chloroform                | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane        | ND     | 5.0 | ug/L  |
| 1,1,1-Trichloroethane     | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride      | ND     | 5.0 | ug/L  |
| Bromodichloromethane      | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane       | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene   | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)     | ND     | 5.0 | ug/L  |
| Benzene                   | 2500   | 250 | ug/L  |
| Dibromochloromethane      | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane     | ND     | 5.0 | ug/L  |
| trans-1,3-Dichloropropene | ND     | 5.0 | ug/L  |
| 2-Chloroethylvinyl ether  | ND     | 5.0 | ug/L  |
| Bromoform                 | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)   | ND     | 5.0 | ug/L  |
| Toluene                   | ND     | 5.0 | ug/L  |
| Chlorobenzene             | ND     | 5.0 | ug/L  |
| Ethylbenzene              | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene       | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene       | ND     | 5.0 | ug/L  |

EPA METHOD 624  
HSL VOLATILE COMPOUNDS

Client: NEW MEXICO-OIL CONSERVATION DIVISION  
Sample ID: KWB-1A  
Project ID: Navajo Refinery  
Lab ID: B955157  
Matrix: Water

Date Reported: 07/18/95  
Date Sampled: 06/29/95  
Date Received: 07/06/95  
Date Extracted: NA  
Date Analyzed: 07/11/95

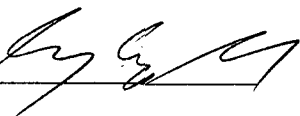
| Parameter           | Result | PQL | Units |
|---------------------|--------|-----|-------|
| Continued           |        |     |       |
| 1,4-Dichlorobenzene | ND     | 5.0 | ug/L  |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 100 | 76 - 114  |
| Toluene-d8                           | 100 | 88 - 110  |
| Bromofluorobenzene                   | 108 | 86 - 115  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



## **QUALITY ASSURANCE / QUALITY CONTROL**

**Quality Control / Quality Assurance****Trace Metals / Known Analysis****TOTAL METALS**

**Client:** NM-OCD  
**Project:** Navajo Refinery  
**Laboratory ID:** W00988-W00990  
**Sample Matrix:** Water  
**Condition:** Cool / Intact

**Date Reported:** 07/30/95  
**Date Sampled:** 06/29/95  
**Date Received:** 07/03/95

| Parameter  | Found<br>Result<br>(mg/L) | Known<br>Result<br>(mg/L) | Percent<br>Recovery | Date<br>Analyzed |
|------------|---------------------------|---------------------------|---------------------|------------------|
| Aluminum   | 1.03                      | 1.00                      | 103%                | 07/13/95         |
| Antimony   | 0.020                     | 0.020                     | 100%                | 07/12/95         |
| Arsenic    | 0.009                     | 0.010                     | 90%                 | 07/12/95         |
| Barium     | 0.98                      | 1.00                      | 98%                 | 07/13/95         |
| Beryllium  | 1.07                      | 1.00                      | 107%                | 07/13/95         |
| Boron      | 1.02                      | 1.00                      | 102%                | 07/13/95         |
| Cadmium    | 0.004                     | 0.004                     | 100%                | 07/06/95         |
| Chromium   | 1.06                      | 1.00                      | 106%                | 07/13/95         |
| Cobalt     | 1.03                      | 1.00                      | 103%                | 07/13/95         |
| Copper     | 0.005                     | 0.005                     | 100%                | 07/11/95         |
| Iron       | 1.06                      | 1.00                      | 106%                | 07/13/95         |
| Lead       | 0.041                     | 0.040                     | 103%                | 07/07/95         |
| Manganese  | 1.04                      | 1.00                      | 104%                | 07/13/95         |
| Mercury    | 0.004                     | 0.004                     | 100%                | 07/17/95         |
| Molybdenum | 1.05                      | 1.00                      | 105%                | 07/13/95         |
| Nickel     | 1.08                      | 1.00                      | 108%                | 07/13/95         |
| Selenium   | 0.010                     | 0.010                     | 100%                | 07/06/95         |
| Silica     | 1.10                      | 1.00                      | 110%                | 07/13/95         |
| Silver     | 0.51                      | 0.50                      | 102%                | 07/13/95         |
| Thallium   | 0.010                     | 0.010                     | 100%                | 07/12/95         |
| Vanadium   | 1.03                      | 1.00                      | 103%                | 07/13/95         |
| Zinc       | 1.04                      | 1.00                      | 104%                | 07/13/95         |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

**Comments:** Quality control run concurrently with the above sample lab numbers.

Reported By: mkhute

Reviewed By: St

**Quality Control / Quality Assurance****Trace Metals / Spike Analysis****TOTAL METALS**

**Client:** NM-OCD  
**Project:** Navajo Refinery  
**Laboratory ID:** W00988-W00990  
**Sample Matrix:** Water  
**Condition:** Cool / Intact

**Date Reported:** 07/30/95  
**Date Sampled:** 06/29/95  
**Date Received:** 07/03/95

| Parameter  | Spiked                     |                            | Spike<br>Added<br>(mg/L) | Percent<br>Recovery |
|------------|----------------------------|----------------------------|--------------------------|---------------------|
|            | Sample<br>Result<br>(mg/L) | Sample<br>Result<br>(mg/L) |                          |                     |
| Aluminum   | 1.50                       | 1.13                       | 0.50                     | 97%                 |
| Antimony   | 0.025                      | 0.001                      | 0.025                    | 100%                |
| Arsenic    | 0.050                      | 0.000                      | 0.100                    | 100%                |
| Barium     | 0.54                       | 0.10                       | 0.50                     | 91%                 |
| Beryllium  | 0.46                       | 0.00                       | 0.50                     | 93%                 |
| Boron      | 1.09                       | 0.63                       | 0.50                     | 103%                |
| Cadmium    | 0.007                      | 0.00                       | 0.008                    | 93%                 |
| Chromium   | 0.46                       | 0.00                       | 0.50                     | 92%                 |
| Cobalt     | 0.44                       | 0.00                       | 0.50                     | 88%                 |
| Copper     | 0.011                      | 0.004                      | 0.010                    | 91%                 |
| Iron       | 1.18                       | 0.80                       | 0.50                     | 91%                 |
| Lead       | 0.021                      | 0.002                      | 0.020                    | 98%                 |
| Manganese  | 0.55                       | 0.11                       | 0.50                     | 90%                 |
| Mercury    | 0.005                      | 0.000                      | 0.005                    | 93%                 |
| Molybdenum | 0.48                       | 0.01                       | 0.50                     | 94%                 |
| Nickel     | 0.46                       | 0.00                       | 0.50                     | 92%                 |
| Selenium   | 0.046                      | 0.001                      | 0.100                    | 91%                 |
| Silica     | 24.89                      | 21.89                      | 5.00                     | 104%                |
| Silver     | 0.38                       | 0.00                       | 0.50                     | 76%                 |
| Thallium   | 0.009                      | 0.00                       | 0.020                    | 91%                 |
| Vanadium   | 0.48                       | 0.02                       | 0.50                     | 92%                 |
| Zinc       | 0.50                       | 0.07                       | 0.50                     | 88%                 |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported By: M. Klute

Reviewed By: df

**Quality Control / Quality Assurance****Trace Metals / Blank Analysis****TOTAL METALS**

**Client:** NM-OCD  
**Project:** Navajo Refinery  
**Laboratory ID:** W00988-W00990  
**Sample Matrix:** Water  
**Condition:** Cool / Intact

**Date Reported:** 07/30/95  
**Date Sampled:** 06/29/95  
**Date Received:** 07/03/95

| Parameter  | Result | Detection<br>(mg/L) |
|------------|--------|---------------------|
| Aluminum   | ND     | 0.10                |
| Antimony   | ND     | 0.01                |
| Arsenic    | ND     | 0.005               |
| Barium     | ND     | 0.50                |
| Beryllium  | ND     | 0.002               |
| Boron      | ND     | 0.01                |
| Cadmium    | ND     | 0.002               |
| Chromium   | ND     | 0.02                |
| Cobalt     | ND     | 0.05                |
| Copper     | ND     | 0.01                |
| Iron       | ND     | 0.05                |
| Lead       | ND     | 0.005               |
| Manganese  | ND     | 0.02                |
| Mercury    | ND     | 0.001               |
| Molybdenum | ND     | 0.01                |
| Nickel     | ND     | 0.01                |
| Selenium   | ND     | 0.005               |
| Silica     | ND     | 1.00                |
| Silver     | ND     | 0.01                |
| Thallium   | ND     | 0.01                |
| Vanadium   | ND     | 0.01                |
| Zinc       | ND     | 0.075               |

**Reference:** U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported By: M. Kuto

Reviewed By: AK

LAB QA/QC  
EPA METHOD 624  
METHOD BLANKDate Analyzed: 07/10/95  
Lab ID: MBW00191  
Matrix: Water

| Parameter                | Result | PQL | Units |
|--------------------------|--------|-----|-------|
| Dichlorodifluoromethane  | ND     | 5.0 | ug/L  |
| Chloromethane            | ND     | 5.0 | ug/L  |
| Bromomethane             | ND     | 5.0 | ug/L  |
| Vinyl Chloride           | ND     | 5.0 | ug/L  |
| Chloroethane             | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane   | ND     | 5.0 | ug/L  |
| Methylene chloride       | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene       | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane       | ND     | 5.0 | ug/L  |
| 2,2-Dichloropropane      | ND     | 5.0 | ug/L  |
| cis-1,2-Dichloroethene   | ND     | 5.0 | ug/L  |
| Chloroform               | ND     | 5.0 | ug/L  |
| Bromochloromethane       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane       | ND     | 5.0 | ug/L  |
| 1,1,1-Trichloroethane    | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride     | ND     | 5.0 | ug/L  |
| 1,1-Dichloropropene      | ND     | 5.0 | ug/L  |
| Benzene                  | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)    | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane      | ND     | 5.0 | ug/L  |
| Bromodichloromethane     | ND     | 5.0 | ug/L  |
| Dibromomethane           | ND     | 5.0 | ug/L  |
| Toluene                  | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane    | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)  | ND     | 5.0 | ug/L  |
| 1,3-Dichloropropane      | ND     | 5.0 | ug/L  |
| Dibromochloromethane     | ND     | 5.0 | ug/L  |
| 1,2-Dibromoethane (EDB)  | ND     | 5.0 | ug/L  |

**LAB QA/QC  
EPA METHOD 624  
METHOD BLANK**

Date Analyzed: 07/10/95  
Lab ID: MBW00191  
Matrix: Water

| Parameter                          | Result | PQL | Units |
|------------------------------------|--------|-----|-------|
| Continued                          |        |     |       |
| Chlorobenzene                      | ND     | 5.0 | ug/L  |
| 1,1,1,2-Tetrachloroethane          | ND     | 5.0 | ug/L  |
| Ethylbenzene                       | ND     | 5.0 | ug/L  |
| Styrene                            | ND     | 5.0 | ug/L  |
| m,p-Xylene                         | ND     | 5.0 | ug/L  |
| o-Xylene                           | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene            | ND     | 5.0 | ug/L  |
| Bromoform                          | ND     | 5.0 | ug/L  |
| Isopropylbenzene                   | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane          | ND     | 5.0 | ug/L  |
| Bromobenzene                       | ND     | 5.0 | ug/L  |
| 1,2,3-Trichloropropane             | ND     | 5.0 | ug/L  |
| n-Propylbenzene                    | ND     | 5.0 | ug/L  |
| 2-Chlorotoluene                    | ND     | 5.0 | ug/L  |
| 1,3,5-Trimethylbenzene             | ND     | 5.0 | ug/L  |
| 4-Chlorotoluene                    | ND     | 5.0 | ug/L  |
| tert-Butylbenzene                  | ND     | 5.0 | ug/L  |
| 1,2,4-Trimethylbenzene             | ND     | 5.0 | ug/L  |
| sec-Butylbenzene                   | ND     | 5.0 | ug/L  |
| 4-Isopropyltoluene                 | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| n-Butylbenzene                     | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| 1,2-Dibromo-3-chloropropane (DBCP) | ND     | 5.0 | ug/L  |
| 1,2,4-Trichlorobenzene             | ND     | 5.0 | ug/L  |
| Hexachlorobutadiene                | ND     | 5.0 | ug/L  |
| Naphthalene                        | ND     | 5.0 | ug/L  |



LAB QA/QC  
EPA METHOD 624  
METHOD BLANKDate Analyzed: 07/10/95  
Lab ID: MBW00191  
Matrix: Water

| Parameter | Result | PQL | Units |
|-----------|--------|-----|-------|
|-----------|--------|-----|-------|

Continued

|                        |    |     |      |
|------------------------|----|-----|------|
| 1,2,3-Trichlorobenzene | ND | 5.0 | ug/L |
|------------------------|----|-----|------|

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 96  | 80 - 120  |
| Toluene-d8                           | 99  | 88 - 110  |
| Bromofluorobenzene                   | 106 | 86 - 115  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



**LAB QA/QC**  
**EPA METHOD 624**  
**MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY**

Date Analyzed: 07/10/95  
Lab ID: 0595H05148  
Matrix: Water

**Original Sample Parameters**

| Parameter             | Spike Added<br>(mg/L) | Sample Result<br>(mg/L) | Spike Result<br>(mg/L) | MS Recovery<br>% | QC Limits<br>Rec. |
|-----------------------|-----------------------|-------------------------|------------------------|------------------|-------------------|
| 1,1-Dichloroethene    | 0.02                  | 0                       | 0.019                  | 95               | 75 - 145          |
| Benzene               | 0.02                  | 0                       | 0.021                  | 105              | 71 - 120          |
| Chlorobenzene         | 0.02                  | 0                       | 0.021                  | 105              | 76 - 127          |
| Toluene               | 0.02                  | 0                       | 0.02                   | 100              | 71 - 127          |
| Trichloroethene (TCE) | 0.02                  | 0                       | 0.019                  | 95               | 75 - 130          |

**Duplicate Sample Parameters**

| Parameter             | Spike Added<br>(mg/L) | MSD Result<br>(mg/L) | MSD Recovery<br>% | RPD<br>% | QC Limits<br>RPD Rec. |
|-----------------------|-----------------------|----------------------|-------------------|----------|-----------------------|
| 1,1-Dichloroethene    | 0.02                  | 0.02                 | 100               | 5        | 14 75 - 145           |
| Benzene               | 0.02                  | 0.022                | 110               | 5        | 14 71 - 120           |
| Chlorobenzene         | 0.02                  | 0.022                | 110               | 5        | 11 76 - 127           |
| Toluene               | 0.02                  | 0.022                | 110               | 10       | 13 71 - 127           |
| Trichloroethene (TCE) | 0.02                  | 0.021                | 105               | 10       | 13 75 - 130           |

**Note:** Spike Recoveries are calculated using zero for Sample result  
if Sample result was less than PQL (Practical Quantitation Level).

**Spike Recovery:** 0 out of 10 outside QC limits.

**RPD:** 0 out of 5 outside QC limits.

Analyst



Reviewed



LAB QA/QC  
EPA METHOD 624  
LAB CONTROL SAMPLEDate Analyzed: 07/10/95  
Lab ID: LCW95191  
Matrix: Water

| Parameter               | Spike Added (mg/L) | Sample Result (mg/L) | LCS Result (mg/L) | LCS Recovery % | QC Limits Rec. |
|-------------------------|--------------------|----------------------|-------------------|----------------|----------------|
| Vinyl Chloride          | 0.02               | 0                    | 0.018             | 90             | 80 -120        |
| Carbon Tetrachloride    | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| Benzene                 | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| 1,2-Dichloroethane      | 0.02               | 0                    | 0.018             | 90             | 80 -120        |
| Trichloroethene (TCE)   | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| 1,2-Dichloropropane     | 0.02               | 0                    | 0.018             | 90             | 80 -120        |
| cis-1,3-Dichloropropene | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| 1,1,2-Trichloroethane   | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| Tetrachloroethene (PCE) | 0.02               | 0                    | 0.02              | 100            | 80 -120        |
| 1,2-Dibromoethane (EDB) | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| Bromoform               | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| 1,4-Dichlorobenzene     | 0.02               | 0                    | 0.018             | 90             | 80 -120        |

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 97  | 80 -120   |
| Toluene-d8                           | 100 | 88 -110   |
| Bromofluorobenzene                   | 101 | 86 -115   |

Spike Recovery: 0 out of 12 outside QC limits.  
Surrogates: Surrogate Recoveries within QC Limits.

Analyst



Reviewed



**LAB QA/QC  
EPA METHOD 624  
METHOD BLANK**

Date Analyzed: 07/11/95  
Lab ID: MBW95192  
Matrix: Water

| Parameter                | Result | PQL | Units |
|--------------------------|--------|-----|-------|
| Dichlorodifluoromethane  | ND     | 5.0 | ug/L  |
| Chloromethane            | ND     | 5.0 | ug/L  |
| Bromomethane             | ND     | 5.0 | ug/L  |
| Vinyl Chloride           | ND     | 5.0 | ug/L  |
| Chloroethane             | ND     | 5.0 | ug/L  |
| Trichlorofluoromethane   | ND     | 5.0 | ug/L  |
| Methylene chloride       | ND     | 5.0 | ug/L  |
| trans-1,2-Dichloroethene | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethene       | ND     | 5.0 | ug/L  |
| 1,1-Dichloroethane       | ND     | 5.0 | ug/L  |
| 2,2-Dichloropropane      | ND     | 5.0 | ug/L  |
| cis-1,2-Dichloroethene   | ND     | 5.0 | ug/L  |
| Chloroform               | ND     | 5.0 | ug/L  |
| Bromochloromethane       | ND     | 5.0 | ug/L  |
| 1,2-Dichloroethane       | ND     | 5.0 | ug/L  |
| 1,1,1-Trichloroethane    | ND     | 5.0 | ug/L  |
| Carbon Tetrachloride     | ND     | 5.0 | ug/L  |
| 1,1-Dichloropropene      | ND     | 5.0 | ug/L  |
| Benzene                  | ND     | 5.0 | ug/L  |
| Trichloroethene (TCE)    | ND     | 5.0 | ug/L  |
| 1,2-Dichloropropane      | ND     | 5.0 | ug/L  |
| Bromodichloromethane     | ND     | 5.0 | ug/L  |
| Dibromomethane           | ND     | 5.0 | ug/L  |
| Toluene                  | ND     | 5.0 | ug/L  |
| 1,1,2-Trichloroethane    | ND     | 5.0 | ug/L  |
| Tetrachloroethene (PCE)  | ND     | 5.0 | ug/L  |
| 1,3-Dichloropropane      | ND     | 5.0 | ug/L  |
| Dibromochloromethane     | ND     | 5.0 | ug/L  |
| 1,2-Dibromoethane (EDB)  | ND     | 5.0 | ug/L  |

**LAB QA/QC  
EPA METHOD 624  
METHOD BLANK**

Date Analyzed: 07/11/95  
Lab ID: MBW95192  
Matrix: Water

| Parameter                          | Result | PQL | Units |
|------------------------------------|--------|-----|-------|
| Continued                          |        |     |       |
| Chlorobenzene                      | ND     | 5.0 | ug/L  |
| 1,1,1,2-Tetrachloroethane          | ND     | 5.0 | ug/L  |
| Ethylbenzene                       | ND     | 5.0 | ug/L  |
| Styrene                            | ND     | 5.0 | ug/L  |
| m,p-Xylene                         | ND     | 5.0 | ug/L  |
| o-Xylene                           | ND     | 5.0 | ug/L  |
| cis-1,3-Dichloropropene            | ND     | 5.0 | ug/L  |
| Bromoform                          | ND     | 5.0 | ug/L  |
| Isopropylbenzene                   | ND     | 5.0 | ug/L  |
| 1,1,2,2-Tetrachloroethane          | ND     | 5.0 | ug/L  |
| Bromobenzene                       | ND     | 5.0 | ug/L  |
| 1,2,3-Trichloropropane             | ND     | 5.0 | ug/L  |
| n-Propylbenzene                    | ND     | 5.0 | ug/L  |
| 2-Chlorotoluene                    | ND     | 5.0 | ug/L  |
| 1,3,5-Trimethylbenzene             | ND     | 5.0 | ug/L  |
| 4-Chlorotoluene                    | ND     | 5.0 | ug/L  |
| tert-Butylbenzene                  | ND     | 5.0 | ug/L  |
| 1,2,4-Trimethylbenzene             | ND     | 5.0 | ug/L  |
| sec-Butylbenzene                   | ND     | 5.0 | ug/L  |
| 4-Isopropyltoluene                 | ND     | 5.0 | ug/L  |
| 1,3-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| 1,4-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| n-Butylbenzene                     | ND     | 5.0 | ug/L  |
| 1,2-Dichlorobenzene                | ND     | 5.0 | ug/L  |
| 1,2-Dibromo-3-chloropropane (DBCP) | ND     | 5.0 | ug/L  |
| 1,2,4-Trichlorobenzene             | ND     | 5.0 | ug/L  |
| Hexachlorobutadiene                | ND     | 5.0 | ug/L  |
| Naphthalene                        | ND     | 5.0 | ug/L  |

Continued

LAB QA/QC  
EPA METHOD 624  
METHOD BLANKDate Analyzed: 07/11/95  
Lab ID: MBW95192  
Matrix: Water

| Parameter | Result | PQL | Units |
|-----------|--------|-----|-------|
|-----------|--------|-----|-------|

Continued

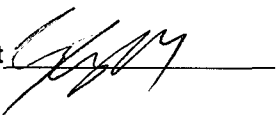
|                        |    |     |      |
|------------------------|----|-----|------|
| 1,2,3-Trichlorobenzene | ND | 5.0 | ug/L |
|------------------------|----|-----|------|

| QUALITY CONTROL - Surrogate Recovery | %   | QC Limits |
|--------------------------------------|-----|-----------|
| 1,2-Dichloroethane-d4                | 93  | 80 - 120  |
| Toluene-d8                           | 102 | 88 - 110  |
| Bromofluorobenzene                   | 110 | 86 - 115  |

ND - Not Detected at Practical Quantitation Level (PQL).

Reference: Method 624 - Purgeables, Methods for Organic Chemical Analysis of  
Municipal and Industrial Wastewater, Appendix A, Federal Register  
40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst



Reviewed



LAB QA/QC  
EPA METHOD 624  
LAB CONTROL SAMPLEDate Analyzed: 07/11/95  
Lab ID: LCW95192  
Matrix: Water

| Parameter               | Spike Added (mg/L) | Sample Result (mg/L) | LCS Result (mg/L) | LCS Recovery % | QC Limits Rec. |
|-------------------------|--------------------|----------------------|-------------------|----------------|----------------|
| Vinyl Chloride          | 0.02               | 0                    | 0.02              | 100            | 80 -120        |
| Carbon Tetrachloride    | 0.02               | 0                    | 0.022             | 110            | 80 -120        |
| Benzene                 | 0.02               | 0                    | 0.021             | 105            | 80 -120        |
| 1,2-Dichloroethane      | 0.02               | 0                    | 0.019             | 95             | 80 -120        |
| Trichloroethene (TCE)   | 0.02               | 0                    | 0.022             | 110            | 80 -120        |
| 1,2-Dichloropropane     | 0.02               | 0                    | 0.021             | 105            | 80 -120        |
| cis-1,3-Dichloropropene | 0.02               | 0                    | 0.021             | 105            | 80 -120        |
| 1,1,2-Trichloroethane   | 0.02               | 0                    | 0.021             | 105            | 80 -120        |
| Tetrachloroethene (PCE) | 0.02               | 0                    | 0.025             | 125 *          | 80 -120        |
| 1,2-Dibromoethane (EDB) | 0.02               | 0                    | 0.022             | 110            | 80 -120        |
| Bromoform               | 0.02               | 0                    | 0.021             | 105            | 80 -120        |
| 1,4-Dichlorobenzene     | 0.02               | 0                    | 0.025             | 125 *          | 80 -120        |

## QUALITY CONTROL - Surrogate Recovery

|                       | %   | QC Limits |
|-----------------------|-----|-----------|
| 1,2-Dichloroethane-d4 | 94  | 80 -120   |
| Toluene-d8            | 99  | 88 -110   |
| Bromofluorobenzene    | 103 | 86 -115   |

Spike Recovery: 2 out of 12 outside QC limits.  
Surrogates: Surrogate Recoveries within QC Limits.

Analyst

Reviewed

**LAB QA/QC**  
**EPA METHOD 624**  
**MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY**

Date Analyzed: 07/11/95  
Lab ID: 0595H05157  
Matrix: Water

**Original Sample Parameters**

| Parameter             | Spike Added<br>(ug/L) | Sample Result<br>(ug/L) | Spike Result<br>(ug/L) | MS Recovery<br>% | QC Limits<br>Rec. |
|-----------------------|-----------------------|-------------------------|------------------------|------------------|-------------------|
| 1,1-Dichloroethene    | 20                    | 0                       | 21                     | 105              | 75 - 145          |
| Chlorobenzene         | 20                    | 0                       | 22                     | 110              | 76 - 127          |
| Toluene               | 20                    | 0                       | 22                     | 110              | 71 - 127          |
| Trichloroethene (TCE) | 20                    | 0                       | 21                     | 105              | 75 - 130          |

**Duplicate Sample Parameters**

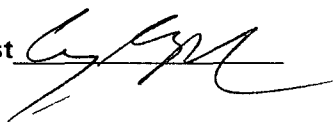
| Parameter             | Spike Added<br>(ug/L) | MSD Result<br>(ug/L) | MSD Recovery<br>% | RPD<br>% | QC Limits<br>RPD Rec. |
|-----------------------|-----------------------|----------------------|-------------------|----------|-----------------------|
| 1,1-Dichloroethene    | 20                    | 21                   | 105               | 0        | 14 75 - 145           |
| Chlorobenzene         | 20                    | 23                   | 115               | 4        | 11 76 - 127           |
| Toluene               | 20                    | 22                   | 110               | 0        | 13 71 - 127           |
| Trichloroethene (TCE) | 20                    | 21                   | 105               | 0        | 13 75 - 130           |

**Note:** Spike Recoveries are calculated using zero for Sample result  
if Sample result was less than PQL (Practical Quantitation Level).

**Spike Recovery:** 0 out of 8 outside QC limits.

**RPD:** 0 out of 4 outside QC limits.

Analyst



Reviewed





## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## LABORATORY SAMPLE RECORD

| PROJ. NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PROJECT NAME | DATE | TIME | STATION LOCATION | NO. OF CONTAINERS | REMARKS                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|------|------------------|-------------------|--------------------------------|
| SAMPLERS: (Signature) <i>Olson</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |      |      |                  |                   |                                |
| 9506280815                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-307       | 2    |      |                  |                   |                                |
| 9506280830                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-1331      | 2    |      |                  |                   |                                |
| 9506280850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-4196      | 2    |      |                  |                   |                                |
| 9506280900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-4798      | 2    |      |                  |                   |                                |
| 9506280920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-1227      | 2    |      |                  |                   |                                |
| 9506280940                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-313       | 2    |      |                  |                   |                                |
| 9506281000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-2723      | 2    |      |                  |                   |                                |
| 9506281010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-3353      | 2    |      |                  |                   |                                |
| 9506281020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RA-3156      | 2    |      |                  |                   |                                |
| 9506281120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | KWB-9        | 2    |      |                  |                   |                                |
| 9506281345                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | KWB-7        | 2    |      |                  |                   |                                |
| 9506281430                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | KWB-3A       | 2    |      |                  |                   |                                |
| 9506281600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | KWB-2A       | 2    |      |                  |                   |                                |
| <div style="display: flex; justify-content: space-between;"> <div> Relinquished by: (Signature) <i>W. Olson</i><br/> Relinquished by: (Signature)<br/> Relinquished by: (Signature) </div> <div> Date / Time<br/> 6/30/95 1400<br/> <br/> <br/> <br/> </div> <div> Received by: (Signature)<br/> Received by: (Signature)<br/> Received for Laboratory by: (Signature) </div> <div> Date / Time<br/> <br/> <br/> <br/> </div> <div> Date / Time<br/> <br/> <br/> <br/> </div> <div> Date / Time<br/> <br/> <br/> <br/> </div> </div> |              |      |      |                  |                   |                                |
| SEALS INTACT <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |      |      |                  |                   | : (Signature)<br>: (Signature) |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |      |      |                  |                   | Remarks                        |

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

**ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT**

LABORATORY SAMPLE RECORD

[illegible]

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field File**



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039

OCD Sample No. 9506280815

|                                                              |                 |                             |     |
|--------------------------------------------------------------|-----------------|-----------------------------|-----|
| Collection Date                                              | Collection Time | Collected by —Person/Agency |     |
| 6/28/95                                                      | 0815            | 0/100                       | OCD |
| <b>SITE INFORMATION</b> <u>Navajo Refinery</u> <u>RA-307</u> |                 |                             |     |
| Sample location                                              |                 |                             |     |
| Collection Site Description                                  |                 |                             |     |
|                                                              |                 |                             |     |
| Township, Range, Section, Tract:                             |                 |                             |     |
|                                                              |                 |                             |     |

SEND ENVIRONMENTAL BUREAU  
FINAL NM OIL CONSERVATION DIVISION  
REPORT PO Box 2088  
TO Santa Fe, NM 87504-2088

|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>SAMPLING CONDITIONS</b>                                                                                                               |                                      | <b>SAMPLE FIELD TREATMENT — Check proper boxes</b>                                                                                                                                                                                                                                             |  |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Water level                          | No. of samples submitted: <u>2</u>                                                                                                                                                                                                                                                             |  |
|                                                                                                                                          | Discharge                            | <input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)<br><input type="checkbox"/> F: Filtered in field with 0.45 $\mu$ m membrane filter<br><input type="checkbox"/> PF: Pre-filtered w/45 $\mu$ m membrane filter                                                               |  |
| pH(00400)                                                                                                                                | Sample type                          | <input type="checkbox"/> NA: No acid added <input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added<br><input checked="" type="checkbox"/> A: HCL <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added<br><input type="checkbox"/> A: 2ml H <sub>2</sub> SO <sub>4</sub> /L added |  |
| Water Temp. (00010)                                                                                                                      | Conductivity (Uncorrected) $\mu$ mho | FIELD COMMENTS:                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          | Conductivity at 25° C $\mu$ mho      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506280830

|                                                |                 |                                 |
|------------------------------------------------|-----------------|---------------------------------|
| Collection Date                                | Collection Time | Collected by —Person/Agency     |
| 6/28/95                                        | 0830            | Olson                           |
| SITE INFORMATION                               |                 |                                 |
| Sample location <u>Nacajo Refinery RA-1331</u> |                 |                                 |
| Collection Site Description                    |                 |                                 |
|                                                |                 | Township, Range, Section, Tract |
|                                                |                 | +                               |

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|                                                                                                                                          |                                    |                                                                                                                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| SAMPLING CONDITIONS                                                                                                                      |                                    | SAMPLE FIELD TREATMENT — Check proper boxes                                                                                                                                                                                                                                                    |  |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Water level                        | No. of samples submitted: <u>2</u>                                                                                                                                                                                                                                                             |  |
| pH(00400)                                                                                                                                | Discharge                          | <input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)<br><input type="checkbox"/> F: Filtered in field with 0.45 $\mu$ m membrane filter<br><input type="checkbox"/> PF: Pre-filtered w/45 $\mu$ m membrane filter                                                               |  |
|                                                                                                                                          | Sample type                        | <input type="checkbox"/> NA: No acid added <input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added<br><input checked="" type="checkbox"/> A: HCL <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added<br><input type="checkbox"/> A: 2ml H <sub>2</sub> SO <sub>4</sub> /L added |  |
|                                                                                                                                          | Conductivity (Uncorrected)         | FIELD COMMENTS:                                                                                                                                                                                                                                                                                |  |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>1 mho</u> |                                                                                                                                                                                                                                                                                                |  |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506280850

|                                                 |                 |                                                         |
|-------------------------------------------------|-----------------|---------------------------------------------------------|
| Collection Date                                 | Collection Time | Collected by —Person/Agency                             |
| <u>6/28/95</u>                                  | <u>0850</u>     | <u>Olson</u>                                            |
| SITE INFORMATION <u>Narajo Refinery RA-4196</u> |                 |                                                         |
| Sample location                                 |                 |                                                         |
| Collection Site Description                     |                 |                                                         |
|                                                 |                 | Township, Range, Section, Tract:<br>      +     +     + |

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PO Box 2088  
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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

## FIELD COMMENTS:

|                                                                                                                                          |                                         |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                             |
|                                                                                                                                          | Discharge                               |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                             |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) <u>1</u> mho |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>1</u> mho      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506280900

|                                                |                 |                            |
|------------------------------------------------|-----------------|----------------------------|
| Collection Date                                | Collection Time | Collected by—Person/Agency |
| 6/28/95                                        | 0900            | Olson                      |
| SITE INFORMATION                               |                 |                            |
| Sample location <u>Navajo Refinery RA-4798</u> |                 |                            |
| Collection Site Description                    |                 |                            |
| Township, Range, Section, Tract                |                 |                            |
| +     +   +                                    |                 |                            |

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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                            |
|                                                                                                                                          | Discharge                              |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                            |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) <u>μmho</u> |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>μmho</u>      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 950628 0920

|                                                 |                 |                              |                                  |
|-------------------------------------------------|-----------------|------------------------------|----------------------------------|
| Collection Date                                 | Collection Time | Collected by — Person/Agency |                                  |
| <u>6/28/95</u>                                  | <u>0920</u>     | <u>Olsen</u>                 | OCD                              |
| SITE INFORMATION <u>Narajo Refinery RA-1227</u> |                 |                              |                                  |
| Sample location                                 |                 |                              |                                  |
| Collection Site Description                     |                 |                              |                                  |
|                                                 |                 |                              | Township, Range, Section, Tract: |
|                                                 |                 |                              | +     +   +                      |

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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                            |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                |
|                                                                                                                                          | Discharge                  |
|                                                                                                                                          | Sample type                |
|                                                                                                                                          | Conductivity (Uncorrected) |
|                                                                                                                                          | Conductivity at 25° C      |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap |                            |
| pH(00400)                                                                                                                                |                            |
| Water Temp. (00010)                                                                                                                      | <u>μmho</u><br><u>μmho</u> |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 606       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabContract No. 95-521.07-039OCD Sample No. 9506280940

|                                              |                 |                                  |
|----------------------------------------------|-----------------|----------------------------------|
| Collection Date                              | Collection Time | Collected by —Person/Agency      |
| 6/28/95                                      | 0940            | O/Son                            |
| SITE INFORMATION                             |                 |                                  |
| Sample location <u>Navajo Pethery RA-313</u> |                 |                                  |
| Collection Site Description                  |                 |                                  |
|                                              |                 | Township, Range, Section, Tract: |
|                                              |                 | +  +  +                          |

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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                     |                                      |
|---------------------|--------------------------------------|
| SAMPLING CONDITIONS | Water level                          |
|                     | Discharge                            |
|                     | Sample type                          |
|                     | Conductivity (Uncorrected) $\mu$ mho |
| pH(00400)           | Conductivity at 25° C $\mu$ mho      |
| Water Temp. (00010) |                                      |

☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7196   | <input type="checkbox"/>     | OTHER          |        |





## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506281000

|                                                |                 |                             |                                  |
|------------------------------------------------|-----------------|-----------------------------|----------------------------------|
| Collection Date                                | Collection Time | Collected by —Person/Agency |                                  |
| 6/28/95                                        | 1000            | Olson                       | OCD                              |
| SITE INFORMATION                               |                 |                             |                                  |
| Sample location <u>Navajo Refinery RA-2723</u> |                 |                             |                                  |
| Collection Site Description                    |                 |                             |                                  |
|                                                |                 |                             | Township, Range, Section, Tract: |
|                                                |                 |                             |                                  |

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TO  
ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                                      |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                          |
|                                                                                                                                          | Discharge                            |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                          |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) $\mu$ mho |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C $\mu$ mho      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 9506281010

|                                                 |                 |                                                    |
|-------------------------------------------------|-----------------|----------------------------------------------------|
| Collection Date                                 | Collection Time | Collected by — Person/Agency                       |
| <u>6/28/95</u>                                  | <u>1010</u>     | <u>Olson</u>                                       |
| SITE INFORMATION <u>Navajo Refinery RA-3353</u> |                 |                                                    |
| Sample location                                 |                 |                                                    |
| Collection Site Description                     |                 |                                                    |
|                                                 |                 | Township, Range, Section, Tract:                   |
|                                                 |                 | <u>          +          +          +          </u> |

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PO Box 2088  
Santa Fe, NM 87504-2088

|                                                                            |                               |                                                               |  |
|----------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------|--|
| SAMPLING CONDITIONS                                                        |                               | Water level                                                   |  |
| <input checked="" type="checkbox"/> Bailed                                 | <input type="checkbox"/> Pump | Discharge                                                     |  |
| <input type="checkbox"/> Dipped                                            | <input type="checkbox"/> Tap  | Sample type                                                   |  |
| pH(00400)                                                                  |                               | Conductivity (Uncorrected)                                    |  |
| Water Temp. (00010)                                                        |                               | Conductivity at 25° C                                         |  |
|                                                                            |                               | μmho                                                          |  |
|                                                                            |                               | μmho                                                          |  |
| SAMPLE FIELD TREATMENT — Check proper boxes                                |                               |                                                               |  |
| No. of samples submitted: <u>2</u>                                         |                               |                                                               |  |
| <input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)        |                               |                                                               |  |
| <input type="checkbox"/> F: Filtered in field with 0.45 μm membrane filter |                               |                                                               |  |
| <input type="checkbox"/> PF: Pre-filtered w/45 μm membrane filter          |                               |                                                               |  |
| <input type="checkbox"/> NA: No acid added                                 |                               | <input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added  |  |
| <input checked="" type="checkbox"/> A: HCL                                 |                               | <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added |  |
| <input type="checkbox"/> A: 2ml H <sub>2</sub> SO <sub>4</sub> /L added    |                               |                                                               |  |
| FIELD COMMENTS:                                                            |                               |                                                               |  |
|                                                                            |                               |                                                               |  |
|                                                                            |                               |                                                               |  |
|                                                                            |                               |                                                               |  |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039

OCD Sample No. 9506281020

|                                                 |                 |                                  |
|-------------------------------------------------|-----------------|----------------------------------|
| Collection Date                                 | Collection Time | Collected by —Person/Agency      |
| <u>6/28/95</u>                                  | <u>1020</u>     | <u>Olson</u>                     |
| SITE INFORMATION <u>Navajo Refinery RA-3156</u> |                 |                                  |
| Sample location                                 |                 |                                  |
| Collection Site Description                     |                 |                                  |
|                                                 |                 | Township, Range, Section, Tract: |
|                                                 |                 | <u>  +  +  +  </u>               |

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NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                                                |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                                    |
|                                                                                                                                          | Discharge                                      |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                                    |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) <u>  </u> $\mu$ mho |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>  </u> $\mu$ mho      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 9506281120

|                                             |                 |                             |                                  |
|---------------------------------------------|-----------------|-----------------------------|----------------------------------|
| Collection Date                             | Collection Time | Collected by —Person/Agency |                                  |
| 6/28/95                                     | 1120            | D/son                       | OCD                              |
| SITE INFORMATION                            |                 |                             |                                  |
| Sample location <u>Narco Refinery KWB-9</u> |                 |                             |                                  |
| Collection Site Description                 |                 |                             |                                  |
|                                             |                 |                             |                                  |
|                                             |                 |                             |                                  |
|                                             |                 |                             | Township, Range, Section, Tract: |
|                                             |                 |                             | +     +   +                      |

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NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                                      |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                          |
|                                                                                                                                          | Discharge                            |
|                                                                                                                                          | Sample type                          |
|                                                                                                                                          | Conductivity (Uncorrected) $\mu$ mho |
|                                                                                                                                          | Conductivity at 25° C $\mu$ mho      |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap |                                      |
| pH(00400)                                                                                                                                |                                      |
| Water Temp. (00010)                                                                                                                      |                                      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 950628/1345

|                                              |                 |                              |                                  |
|----------------------------------------------|-----------------|------------------------------|----------------------------------|
| Collection Date                              | Collection Time | Collected by — Person/Agency |                                  |
| 6/28/95                                      | 1345            | Olson                        | OCD                              |
| SITE INFORMATION                             |                 |                              |                                  |
| Sample location <u>Navajo Refinery KWB-7</u> |                 |                              |                                  |
| Collection Site Description                  |                 |                              |                                  |
|                                              |                 |                              | Township, Range, Section, Tract: |
|                                              |                 |                              | +     +   +                      |

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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                            |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                |
|                                                                                                                                          | Discharge                  |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506281430

|                                               |                 |                            |
|-----------------------------------------------|-----------------|----------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency |
| 6/28/95                                       | 1430            | O/son                      |
| SITE INFORMATION                              |                 |                            |
| Sample location <u>Navejo Refinery KWB-3A</u> |                 |                            |
| Collection Site Description                   |                 |                            |
| Township, Range, Section, Tract:              |                 |                            |
|                                               |                 |                            |

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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                            |
|                                                                                                                                          | Discharge                              |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                            |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) <u>μmho</u> |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>μmho</u>      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 804    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 950628/600

|                                               |                 |                                         |
|-----------------------------------------------|-----------------|-----------------------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency              |
| <u>6/28/85</u>                                | <u>1600</u>     | <u>Olson</u>                            |
| SITE INFORMATION                              |                 |                                         |
| Sample location <u>Navajo Refinery KWB-2A</u> |                 |                                         |
| Collection Site Description                   |                 |                                         |
|                                               |                 | Township, Range, Section, Tract:        |
|                                               |                 | <u>  </u> <u>  </u> <u>  </u> <u>  </u> |

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**NM OIL CONSERVATION DIVISION**  
**PO Box 2088**  
**Santa Fe, NM 87504-2088**

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                            |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                |
|                                                                                                                                          | Discharge                  |
|                                                                                                                                          | Sample type                |
|                                                                                                                                          | Conductivity (Uncorrected) |
|                                                                                                                                          | Conductivity at 25° C      |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap |                            |
| pH(00400)                                                                                                                                |                            |
| Water Temp. (00010)                                                                                                                      |                            |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506290800

|                                                        |                 |                            |                                  |
|--------------------------------------------------------|-----------------|----------------------------|----------------------------------|
| Collection Date                                        | Collection Time | Collected by—Person/Agency |                                  |
| <u>6/28/95</u>                                         | <u>0800</u>     | <u>O/Son</u>               | OCD                              |
| SITE INFORMATION <u>Navajo Refinery</u> <u>KWB-12A</u> |                 |                            |                                  |
| Sample location                                        |                 |                            |                                  |
| Collection Site Description                            |                 |                            |                                  |
|                                                        |                 |                            | Township, Range, Section, Tract: |
|                                                        |                 |                            | +       +       +                |

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PO Box 2088  
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## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                     |                                      |
|---------------------|--------------------------------------|
| SAMPLING CONDITIONS | Water level                          |
|                     | Discharge                            |
|                     | Sample type                          |
|                     | Conductivity (Uncorrected) $\mu$ mho |
| pH(00400)           | Conductivity at 25° C $\mu$ mho      |
| Water Temp. (00010) |                                      |

☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |





## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506291015

|                                                |                 |                              |
|------------------------------------------------|-----------------|------------------------------|
| Collection Date                                | Collection Time | Collected by — Person/Agency |
| <u>6/29/95</u>                                 | <u>1015</u>     | <u>Olson</u>                 |
| SITE INFORMATION                               |                 |                              |
| Sample location <u>Navejo Refinery KWB-11A</u> |                 |                              |
| Collection Site Description                    |                 |                              |
| Township, Range, Section, Tract:               |                 |                              |
|                                                |                 |                              |

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TO Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

pH(00400)

Water Temp. (00010)

Water level

Discharge

Sample type

Conductivity (Uncorrected)

Conductivity at 25° C

 $\mu$ mho $\mu$ mho

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506291100

|                                               |                 |                            |                                  |
|-----------------------------------------------|-----------------|----------------------------|----------------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency |                                  |
| 6/29/95                                       | 1100            | Olson                      | OCD                              |
| SITE INFORMATION                              |                 |                            |                                  |
| Sample location <u>Navajo Refinery KWB-1C</u> |                 |                            |                                  |
| Collection Site Description                   |                 |                            |                                  |
|                                               |                 |                            |                                  |
|                                               |                 |                            | Township, Range, Section, Tract: |
|                                               |                 |                            | +       +       +                |

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PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                                                                                                                                          |                            |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                |
|                                                                                                                                          | Discharge                  |
|                                                                                                                                          | Sample type                |
|                                                                                                                                          | Conductivity (Uncorrected) |
|                                                                                                                                          | Conductivity at 25° C      |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap |                            |
| pH(00400)                                                                                                                                |                            |
| Water Temp. (00010)                                                                                                                      |                            |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabsContract No. 95-521.07-039OCD Sample No. 9506 29 1100

|                             |                 |                                  |
|-----------------------------|-----------------|----------------------------------|
| Collection Date             | Collection Time | Collected by —Person/Agency      |
| 6/25/95                     | 1100            | Dei Olson                        |
| SITE INFORMATION            |                 |                                  |
| Sample location             |                 |                                  |
| Collection Site Description |                 |                                  |
|                             |                 | Township, Range, Section, Tract: |
|                             |                 |                                  |

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PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☐ NA: No acid added  
☐ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☒ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                     |                            |
|---------------------|----------------------------|
| SAMPLING CONDITIONS | Water level                |
|                     | Discharge                  |
|                     | Sample type                |
|                     | Conductivity (Uncorrected) |
| pH(00400)           | Conductivity at 25° C      |
| Water Temp. (00010) |                            |

## LAB ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input checked="" type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input checked="" type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input checked="" type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033            | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 9506291100

|                                               |                 |                            |
|-----------------------------------------------|-----------------|----------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency |
| 6/29/95                                       | 1100            | Olson                      |
| SITE INFORMATION                              |                 |                            |
| Sample location <u>Navajo Refinery KWB-1c</u> |                 |                            |
| Collection Site Description                   |                 |                            |
| Township, Range, Section, Tract               |                 |                            |
|                                               |                 |                            |

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|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| SAMPLING CONDITIONS                                                                                                                      |                                      | SAMPLE FIELD TREATMENT — Check proper boxes                                                                                                                                                                                                                                                    |  |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Water level                          | No. of samples submitted: <u>1</u>                                                                                                                                                                                                                                                             |  |
| pH(00400)                                                                                                                                | Discharge                            | <input checked="" type="checkbox"/> NF: Whole sample (Non-filtered)<br><input type="checkbox"/> F: Filtered in field with 0.45 $\mu$ m membrane filter<br><input type="checkbox"/> PF: Pre-filtered w/45 $\mu$ m membrane filter                                                               |  |
| Water Temp. (00010)                                                                                                                      | Sample type                          | <input checked="" type="checkbox"/> NA: No acid added <input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added<br><input type="checkbox"/> A: HCL <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added<br><input type="checkbox"/> A: 2ml H <sub>2</sub> SO <sub>4</sub> /L added |  |
|                                                                                                                                          | Conductivity (Uncorrected) $\mu$ mho | FIELD COMMENTS:                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          | Conductivity at 25° C $\mu$ mho      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |
|                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                |  |

## LAB ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028            | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031            | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032            | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input checked="" type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506291100

|                                               |                 |                                  |
|-----------------------------------------------|-----------------|----------------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency       |
| 6/29/95                                       | 1100            | Olson                            |
| SITE INFORMATION                              |                 |                                  |
| Sample location <u>Alvijo Refinery KWB-1c</u> |                 |                                  |
| Collection Site Description                   |                 |                                  |
|                                               |                 | Township, Range, Section, Tract: |
|                                               |                 | +     +     +                    |

SEND  
FINAL  
REPORT  
TO ↓ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☒ NA: No acid added  
☐ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

Water Temp. (00010)

Conductivity at 25° C

11 mho11 mho

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006            | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input checked="" type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7196   | <input type="checkbox"/>     | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabContract No. 95-521.07-039OCD Sample No. 950629 1145

| Collection Date | Collection Time | Collected by — Person/Agency |
|-----------------|-----------------|------------------------------|
| 6/29/95         | 1145            | Olsen                        |

OCD

## SITE INFORMATION

Sample location

Navajo Refinery MW-18

Collection Site Description

Township, Range, Section, Tract:

END ENVIRONMENTAL BUREAU  
NAL NM OIL CONSERVATION DIVISION  
REPORT PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☐ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☒ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

 $\mu$ mho

Water Temp. (00010)

Conductivity at 25° C

 $\mu$ mho

## LAB ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input checked="" type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VCH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input checked="" type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input checked="" type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033            | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 950629 1145

| Collection Date | Collection Time | Collected by—Person/Agency | OCD |
|-----------------|-----------------|----------------------------|-----|
| 6/29/95         | 1145            | Olsen                      |     |

## SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract:

ND ENVIRONMENTAL BUREAU  
CAL NM OIL CONSERVATION DIVISION  
REPORT PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☒ NA: No acid added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: HCL  
☐ A: 4ml fuming HNO<sub>3</sub> added  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

Water Temp. (00010)

Conductivity at 25° C

 $\mu$ mho $\mu$ mho

FIELD COMMENTS:

## LAB ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028            | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031            | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032            | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input checked="" type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | FAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | FAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Tract Lab Intermountain Labs Contract No. 95-521.07-039CD Sample No. 9506291145

| Collection Date | Collection Time | Collected by—Person/Agency | MOCD |
|-----------------|-----------------|----------------------------|------|
| <u>12/29/95</u> | <u>1145</u>     | <u>Olson</u>               |      |

## SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract:

D  
AL  
PORT  
ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☒ NA: No acid added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: HCL  
☐ A: 4ml fuming HNO<sub>3</sub> added  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

Conductivity (Uncorrected)

 $\mu$ mho

Conductivity at 25° C

 $\mu$ mho

(00400)

Water Temp. (00010)

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 804    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006            | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input checked="" type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |





## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabContract No. 95-521.07-039OCD Sample No. 9506291145

|                                              |                 |                            |
|----------------------------------------------|-----------------|----------------------------|
| Collection Date                              | Collection Time | Collected by—Person/Agency |
| 6/29/95                                      | 1145            | Olsen                      |
| SITE INFORMATION                             |                 |                            |
| Sample location <u>Navajo Refinery MW-18</u> |                 |                            |
| Collection Site Description                  |                 |                            |
| Township, Range, Section, Tract:             |                 |                            |
| +     +   +                                  |                 |                            |

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

|                     |                            |
|---------------------|----------------------------|
| SAMPLING CONDITIONS | Water level                |
|                     | Discharge                  |
|                     | Sample type                |
|                     | Conductivity (Uncorrected) |
| pH(00400)           | Conductivity at 25° C      |
| Water Temp. (00010) |                            |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 802       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7196   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 950629/1330

|                                              |                 |                                 |
|----------------------------------------------|-----------------|---------------------------------|
| Collection Date                              | Collection Time | Collected by—Person/Agency      |
| 6/29/95                                      | 1330            | Olson                           |
| SITE INFORMATION                             |                 |                                 |
| Sample location <u>Nawajo Refinery MW-45</u> |                 |                                 |
| Collection Site Description                  |                 |                                 |
|                                              |                 |                                 |
|                                              |                 | Township, Range, Section, Tract |
|                                              |                 | +     +                         |

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REPORT  
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ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☒ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub> added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

## FIELD COMMENTS:

|                                                                                                                                          |                                         |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                             |
|                                                                                                                                          | Discharge                               |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                             |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) <u>4</u> mho |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C <u>4</u> mho      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabsContract No. 95-521.07-039OCD Sample No. 950629/1330

| Collection Date | Collection Time | Collected by—Person/Agency | OCD |
|-----------------|-----------------|----------------------------|-----|
| <u>6/29/95</u>  | <u>1330</u>     | <u>O/son</u>               |     |

## SITE INFORMATION

Sample location

Naraja Refinery MW-45

Collection Site Description

Township, Range, Section, Tract:

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☒ NA: No acid added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: HCL  
☐ A: 4ml fuming HNO<sub>3</sub> added  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

4 mho

Water Temp. (00010)

Conductivity at 25° C

4 mho

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006            | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input checked="" type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7196   | <input type="checkbox"/>     | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 950629/1330

| Collection Date | Collection Time | Collected by—Person/Agency | OCD |
|-----------------|-----------------|----------------------------|-----|
| <u>5/29/95</u>  | <u>1330</u>     | <u>Olson</u>               |     |

## SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract:

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT— Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☒ NA: No acid added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: HCL  
☐ A: 4ml fuming HNO<sub>3</sub> added  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

 $\mu$ mho

Water Temp. (00010)

Conductivity at 25° C

 $\mu$ mho

## ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028            | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031            | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032            | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input checked="" type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039JCD Sample No. 9506291330

| Collection Date | Collection Time | Collected by—Person/Agency |
|-----------------|-----------------|----------------------------|
| <u>5/29/95</u>  | <u>1330</u>     | <u>O/son</u>               |

## SITE INFORMATION

Sample location

Collection Site Description

Township, Range, Section, Tract:

ND  
AL  
PORT  
ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☐ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☒ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

Water Temp. (00010)

Conductivity at 25° C

 $\mu$ mho $\mu$ mho

## ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 028            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input checked="" type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input checked="" type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input checked="" type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033            | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



## STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Lab Contract No. 95-521.07-039OCD Sample No. 9506281520

| Collection Date | Collection Time | Collected by—Person/Agency |
|-----------------|-----------------|----------------------------|
| 6/29/95         | 1520            | Olson                      |

OCD

## SITE INFORMATION

Sample location

Navajo Refinery KWB-1A

Collection Site Description

Township, Range, Section, Tract:

END  
FINAL  
REPORT  
↓

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☒ NA: No acid added  
☐ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub> added
- ☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

pH(00400)

Conductivity (Uncorrected)

Water Temp. (0001C)

Conductivity at 25° C

 $\mu$ mho $\mu$ mho

## AB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                          | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|-------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013  | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014  | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015  | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016  | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017  | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input type="checkbox"/> 006            | SUITE     | 601-602   | <input type="checkbox"/> 018  | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019  | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020  | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input checked="" type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022* | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023  | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024  | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025  | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain Labs Contract No. 95-521.07-039OCD Sample No. 9506281520

|                                               |                 |                            |                                 |
|-----------------------------------------------|-----------------|----------------------------|---------------------------------|
| Collection Date                               | Collection Time | Collected by—Person/Agency |                                 |
| 6/29/95                                       | 1520            | Olgon                      | OCD                             |
| SITE INFORMATION                              |                 |                            |                                 |
| Sample location <u>Navajo Refinery KWB-1A</u> |                 |                            |                                 |
| Collection Site Description                   |                 |                            |                                 |
|                                               |                 |                            | Township, Range, Section, Tract |
|                                               |                 |                            | +                               |

SEND  
FINAL  
REPORT  
TO ↓  
ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 2

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$ m membrane filter  
☐ PF: Pre-filtered w/45  $\mu$ m membrane filter

- ☐ NA: No acid added  
☒ A: HCL  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub>/L added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: 4ml fuming HNO<sub>3</sub> added

## FIELD COMMENTS:

|                                                                                                                                          |                            |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SAMPLING CONDITIONS                                                                                                                      | Water level                |
|                                                                                                                                          | Discharge                  |
| <input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Pump<br><input type="checkbox"/> Dipped <input type="checkbox"/> Tap | Sample type                |
| pH(00400)                                                                                                                                | Conductivity (Uncorrected) |
| Water Temp. (00010)                                                                                                                      | Conductivity at 25° C      |

## LAB ANALYSIS REQUESTED:

| ITEM                                    | DESC      | METHOD    | ITEM                         | DESC   | METHOD | ITEM                         | DESC           | METHOD |
|-----------------------------------------|-----------|-----------|------------------------------|--------|--------|------------------------------|----------------|--------|
| <input type="checkbox"/> 001            | VOA       | 8020      | <input type="checkbox"/> 013 | PHENOL | 604    | <input type="checkbox"/> 026 | Cd             | 7130   |
| <input type="checkbox"/> 002            | VOA       | 602       | <input type="checkbox"/> 014 | VOC    | 8240   | <input type="checkbox"/> 027 | Pb             | 7421   |
| <input type="checkbox"/> 003            | VOH       | 8010      | <input type="checkbox"/> 015 | VOC    | 624    | <input type="checkbox"/> 028 | Hg(L)          | 7470   |
| <input type="checkbox"/> 004            | VOH       | 601       | <input type="checkbox"/> 016 | SVOC   | 8250   | <input type="checkbox"/> 031 | Se             | 7740   |
| <input type="checkbox"/> 005            | SUITE     | 8010-8020 | <input type="checkbox"/> 017 | SVOC   | 625    | <input type="checkbox"/> 032 | ICAP           | 6010   |
| <input checked="" type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018 | VOC    | 8260   | <input type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007            | HEADSPACE |           | <input type="checkbox"/> 019 | SVOC   | 8270   | <input type="checkbox"/> 034 | N SUITE        |        |
| <input type="checkbox"/> 008            | PAH       | 8100      | <input type="checkbox"/> 020 | O&G    | 9070   | <input type="checkbox"/> 035 | NITRATE        |        |
| <input type="checkbox"/> 009            | PAH       | 610       | <input type="checkbox"/> 022 | AS     | 7060   | <input type="checkbox"/> 036 | NITRITE        |        |
| <input type="checkbox"/> 010            | PCB       | 8080      | <input type="checkbox"/> 023 | Ba     | 7080   | <input type="checkbox"/> 037 | AMMONIA        |        |
| <input type="checkbox"/> 011            | PCB       | 608       | <input type="checkbox"/> 024 | Cr     | 7190   | <input type="checkbox"/> 038 | TKN            |        |
| <input type="checkbox"/> 012            | PHENOL    | 8040      | <input type="checkbox"/> 025 | Cr6    | 7198   | <input type="checkbox"/>     | OTHER          |        |



## STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

## ANALYSIS REQUEST FORM

Contract Lab Intermountain LabContract No. 95-521.07-039OCD Sample No. 9506281520

| Collection Date | Collection Time | Collected by—Person/Agency | OCD |
|-----------------|-----------------|----------------------------|-----|
| 6/29/95         | 1520            | Olgon                      |     |

## SITE INFORMATION

Sample location

Navajo Refinery KWB-1A

Collection Site Description

Township, Range, Section, Tract:

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1

- ☒ NF: Whole sample (Non-filtered)  
☐ F: Filtered in field with 0.45  $\mu$  membrane filter  
☐ PF: Pre-filtered w/45  $\mu$  membrane filter

- ☒ NA: No acid added  
☐ A: 5ml conc. HNO<sub>3</sub> added  
☐ A: HCL  
☐ A: 4ml fuming HNO<sub>3</sub> added  
☐ A: 2ml H<sub>2</sub>SO<sub>4</sub> added

FIELD COMMENTS:

## SAMPLING CONDITIONS

Water level

- ☒ Bailed ☐ Pump  
☐ Dipped ☐ Tap

Discharge

Sample type

W(00400)

Conductivity (Uncorrected)

Wats: Temp. (00010)

Conductivity at 25° C

1 mho1 mho

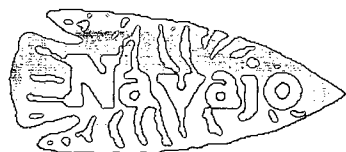
## LAB ANALYSIS REQUESTED:

| ITEM                         | DESC      | METHOD    | ITEM                          | DESC   | METHOD | ITEM                                    | DESC           | METHOD |
|------------------------------|-----------|-----------|-------------------------------|--------|--------|-----------------------------------------|----------------|--------|
| <input type="checkbox"/> 001 | VOA       | 8020      | <input type="checkbox"/> 013  | PHENOL | 604    | <input type="checkbox"/> 026            | Cd             | 7130   |
| <input type="checkbox"/> 002 | VOA       | 602       | <input type="checkbox"/> 014  | VOC    | 8240   | <input type="checkbox"/> 027            | Pb             | 7421   |
| <input type="checkbox"/> 003 | VOH       | 8010      | <input type="checkbox"/> 015  | VOC    | 624    | <input type="checkbox"/> 028            | Hg(L)          | 7470   |
| <input type="checkbox"/> 004 | VOH       | 601       | <input type="checkbox"/> 016  | SVOC   | 8250   | <input type="checkbox"/> 031            | Se             | 7740   |
| <input type="checkbox"/> 005 | SUITE     | 8010-8020 | <input type="checkbox"/> 017  | SVOC   | 625    | <input type="checkbox"/> 032            | ICAP           | 6010   |
| <input type="checkbox"/> 006 | SUITE     | 601-602   | <input type="checkbox"/> 018  | VOC    | 8260   | <input checked="" type="checkbox"/> 033 | CATIONS/ANIONS |        |
| <input type="checkbox"/> 007 | HEADSPACE |           | <input type="checkbox"/> 019  | SVOC   | 8270   | <input type="checkbox"/> 034            | N SUITE        |        |
| <input type="checkbox"/> 008 | PAH       | 8100      | <input type="checkbox"/> 020  | O&G    | 9070   | <input type="checkbox"/> 035            | NITRATE        |        |
| <input type="checkbox"/> 009 | PAH       | 610       | <input type="checkbox"/> 022* | AS     | 7060   | <input type="checkbox"/> 036            | NITRITE        |        |
| <input type="checkbox"/> 010 | PCB       | 8080      | <input type="checkbox"/> 023  | Ba     | 7080   | <input type="checkbox"/> 037            | AMMONIA        |        |
| <input type="checkbox"/> 011 | PCB       | 608       | <input type="checkbox"/> 024  | Cr     | 7190   | <input type="checkbox"/> 038            | TKN            |        |
| <input type="checkbox"/> 012 | PHENOL    | 8040      | <input type="checkbox"/> 025  | Cr6    | 7198   | <input type="checkbox"/>                | OTHER          |        |



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 25, 1996

RECEIVED

JAN 29 1996

CERTIFIED MAIL/RETURN RECEIPT  
P 466 329 999

Mr Bill Olson  
Hydrogeologist  
Environmental Bureau  
Oil Conservation Division  
2040 S. Pacheco St.  
Santa Fe, NM 87505-5472

Environmental Bureau  
Oil Conservation Division

**RE: 4th QUARTER 1995 INVESTIGATIVE REPORT - GROUND WATER REMEDIATION,  
NAVAJO REFINING CO., EDDY COUNTY, NM**

Dear Bill,

Enclosed, please find 1) Ground Water potentiometric map, 2) Product thickness map, and 3) analysis of our sampling for this quarter. Of course, the sampling for this quarter does not include any irrigation wells per your letter of October 8, 1992. The analysis does include the annual sampling as stated in your letter and schedule of July 25, 1994. Also, KWB-12A, which is the monitor well across the road and south of Bolton Road-1, could not be sampled. It had no water in it.

We have set up the recovery wells on timers to get an idea of how much water each one pumped. Although this is not entirely accurate, it is the best system we have been able to come up with. The fluid that comes out of these wells just desroys any guages we have been able to find. The amount of fluid pumped this quarter from each well is as follows:

|             | PRODUCT        | WATER           |
|-------------|----------------|-----------------|
| RW-1        | 4815 GALLONS   | 19008 GALLONS   |
| RW-2        | 28343 GALLONS  | 1172232 GALLONS |
| RW-4        | 8049 GALLONS   | 0 GALLONS       |
| RW-5        | 105616 GALLONS | 19368 GALLONS   |
| RW-7        | 10719 GALLONS  | 1256544 GALLONS |
| RW-8        | 11360 GALLONS  | 939096 GALLONS  |
| RW-9        | 0 GALLONS      | 921960 GALLONS  |
| RW-10       | 7508 GALLONS   | 1452816 GALLONS |
| BOLTON RD-1 | 0 GALLONS      | 875088 GALLONS  |
| BOLTON RD-2 | 0 GALLONS      | 1014192 GALLONS |
| BOLTON RD-3 | 825 GALLONS    | 647568 GALLONS  |
| BOLTON RD-4 | 441 GALLONS    | 892980 GALLONS  |

This comes to a total of 177,678 gallons of product pumped and 9,210,240 gallons of water pumped plant wide this quarter. These totals are from October 1, 1995 to December 31, 1995. As you can see, the Bolton Road well's production of product is low. In our last quarterly report, we told you that these wells may have been drowning in water therby restricting the product flow to the wet well. We felt that might be the reason these wells were not making any product. After measuring all the monitor wells and piezometers in

the area and adjusting the level of the pumps in the wells, we have determined that there is just not a whole lot of product in that area. Finally, the water totals are only approximations based on the time the pumps ran.

If there are any questions concerning this report, please call me at 505-748-3311. Thank you for your time in this matter.

Regards,  
NAVAJO REFINING CO.

A handwritten signature in black ink that reads "Darrell Moore". The signature is written in a cursive, slightly slanted style.

Darrell Moore  
Sr. Environmental Specialist  
Encl.

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 10/13/95

Analysis Date: 10/13/95

Sampling Date: 10/12/95

Sample Condition: Intact & Cool

Sample Received by: MCD

Project Name: NA

October 25, 1995

Receiving Date: 10/13/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

| TA#    | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|--------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T42703 | RA-2723         | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| QC     | Quality Control | 96             | 100               | 100               | 96                          | 96                        | 96                     |

Reporting Limit

|                       |     |     |     |     |    |    |    |
|-----------------------|-----|-----|-----|-----|----|----|----|
| RPD                   | 13  | 8   | 8   | 8   | 8  | 8  | 8  |
| % Extraction Accuracy | 114 | 98  | 100 | 100 | 97 | 99 | 99 |
| % Instrument Accuracy | 96  | 100 | 100 | 100 | 96 | 96 | 96 |

METHODS: EPA SW 846-5030, 8020.  
MTBE/BTEX SPIKE AND QC: 100 ug/L MTBE/BTEX.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

10-25-95

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**  
**1 (800) 378 1296**

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

**Project Manager:**

**Phone #:****FAX #:**

**Company Name & Address:**

**Project #:**

**Project Name :**

**Project Location:**

**Sampler Signature:**

[illegible]

**Relinquished by:**

**Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Received by:**

**Time:**

REMARKS

**Relinquished by:**

**Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Received by:**

**Time:**

**Relinquished by:**

**Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Received at Laboratory by:**

**Time:**

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 10/27/95

Analysis Date: 10/27/95

Sampling Date: 10/26/95

Sample Condition: Intact & Cool

Sample Received by: MCD

Project Name: NA

October 30, 1995

Receiving Date: 10/27/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ETHYL- M,P,O TOTAL  
BENZENE XYLENE BTEX  
(ug/L) (ug/L) (ug/L)

MTBE BENZENE TOLUENE  
(ug/L) (ug/L) (ug/L)

Field Code

T43368 RA-2723

T43369 RA-4196

T43370 RA-4798

QC Quality Control

<1 <1 <1 <1 <1 <1

<1 <1 <1 <1 <1 <1

<1 <1 <1 <1 <1 <1

101 105 101 104 315

Reporting Limit

1 1 1 1 1 1

RPD

% Extraction Accuracy

% Instrument Accuracy

2 3 1 0 1

102 110 106 108 109

102 105 102 104 105

METHODS: EPA SW 846-5030, 8020.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

10-30-95

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**  
**1 (800) 378 1296**

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

**Phone #:** 502 702 5222

**FAX #:** 714-261-6222

1990

**Project Name :**

**Sampler Signature:**

**Countdown to Confusion**

[illegible]

| REMARKS          |       |       |                                        |
|------------------|-------|-------|----------------------------------------|
| Relinquished by: | Date: | Time: | Received by: Date: Time:               |
| Relinquished by: | Date: | Time: | Received by: Date: Time:               |
| Relinquished by: | Date: | Time: | Received at Laboratory by: Date: Time: |

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 11/10/95

Analysis Date: 11/10/95

Sampling Date: 11/09/95

Sample Condition: Intact & Cool

Sample Received by: ML

Project Name: NA

November 14, 1995

Receiving Date: 11/10/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM 88211

| TA# | Field Code | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTEX<br>(ug/L) |
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|-------------------------|
|-----|------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|-------------------------|

T43997 RA-2723

QC Quality Control

<1

100

<1

111

<1

90

<1

90

<1

268

<1

Reporting Limit

1

1

1

1

1

RPD

% Extraction Accuracy

% Instrument Accuracy

29

118

100

32

120

112

6

100

90

4

102

90

3

101

90

METHODS: EPA SW 846-5030, 8020.

Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

Date

11-14-95

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**  
**1 (800) 378 1296**

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 925-442-3834  
FAX #: 925-442-3834

**Company Name & Address:**  
WARRIOR ZONE LLC  
PO BOX 608  
MILWAUKEE WI 53201

**Project Name :**

Project Location: 1100 1st St. NW  
 Sampler Signature: [Signature]

**Sampler Signature:**

[illegible]

Relinquished by: Paula Jones Date: 10/1/95 Time: 10:30

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

REMARKS

**Relinquished by:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received at Laboratory by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 11/24/95

Analysis Date: 11/24/95

Sampling Date: 11/22/95

Sample Condition: Intact & Cool

Sample Received by: McD

Project Name: NA

November 30, 1995

Receiving Date: 11/24/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM 88211

ETHYL- M,P,O TOTAL  
BENZENE XYLENE BTEX  
(ug/L) (ug/L) (ug/L)

MTBE BENZENE TOLUENE  
(ug/L) (ug/L) (ug/L)

TA# Field Code

T44688 RW - 2723 Bi-wkly  
QC Quality Control

<1 <1 <1 <1 <1  
95 102 99 104 319

Reporting Limit

1 1 1 1 1

RPD

% Extraction Accuracy

% Instrument Accuracy

5 7 6 3  
104 107 105 105  
95 102 104 106

METHODS: EPA SW 846-5030, 8020.  
MTBE/BTEX SPIKE AND QC: 100 ug/L MTBE/BTEX.

Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell

Date

11-30-95

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**  
**1 (800) 378 1296**

### **Project Manager:**

五、

**Phone #:** 202-331-2444

**FAX #:****Company Name & Address:**

SECRET

**Project #:**

**Project Name :**

**Project Location:****Sampler Signature:**

12-59A, 27-33-21

陳子昂

[illegible]

| REMARKS          |       |       |                            |
|------------------|-------|-------|----------------------------|
| Relinquished by: | Date: | Time: | Received by:               |
| Relinquished by: | Date: | Time: | Received by:               |
| Relinquished by: | Date: | Time: | Received at Laboratory by: |

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 11/24/95

Analysis Date: 11/24/95

Sampling Date: 11/22/95

Sample Condition: Intact & Cool

Sample Received by: McD

Project Name: NA

November 27, 1995

Receiving Date: 11/24/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

| TA#    | Field Code      | MTBE<br>(ug/L) | BENZENE<br>(ug/L) | TOLUENE<br>(ug/L) | ETHYL-<br>BENZENE<br>(ug/L) | M,P,O<br>XYLENE<br>(ug/L) | TOTAL<br>BTX<br>(ug/L) |
|--------|-----------------|----------------|-------------------|-------------------|-----------------------------|---------------------------|------------------------|
| T44685 | RA - 4196       | <1             | <1                | <1                | <1                          | <1                        | <1                     |
| T44686 | RA - 4798       | <1             | <1                | 1                 | <1                          | <1                        | 1                      |
| QC     | Quality Control | 86             | 104               | 116               | 104                         | 297                       |                        |

Reporting Limit

RPD

% Extraction Accuracy

% Instrument Accuracy

METHODS: EPA SW 846-5030, 8020.

MTBE/BTEX SPIKE AND QC: 100 ug/L MTBE/BTEX.



Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonnell

11-27-95

Date

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

## ANALYTICAL RESULTS FOR

NAVAJO REFINING COMPANY

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 12/07/95

Analysis Date: 12/08/95

Sampling Date: 12/05/95

Sample Condition: Intact & Cool

Sample Received by: ML

Project Name: NA

December 15, 1995

Receiving Date: 12/06/95

Sample Type: Water

Project No: NA

Project Location: Artesia, NM

ETHYL-  
BENZENE  
(ug/L)

TOLUENE  
(ug/L)

BENZENE  
(ug/L)

MTBE  
(ug/L)

M, P, O  
XYLENE  
(ug/L)

TOTAL  
BTX  
(ug/L)

Field Code

RA-2723

Quality Control

T45223

QC

<1

<1

<1

<1

<1

104

<1

104

<1

104

<1

104

<1

106

<1

106

<1

308

Reporting Limit

1

1

1

1

1

RPD

% Extraction Accuracy

% Instrument Accuracy

4

99

104

1

102

104

4

101

106

0

100

103

0

100

103

METHODS: EPA SW 846-5030, 8020.

MTBE/BTEX SPIKE AND QC: 100 ug/L MTBE/BTEX.

*BB*

Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonnell

Date

12-15-95

**6701 Aberdeen Avenue Lubbock, Texas 79424**  
**Tel (806) 794 1296 Fax (806) 794 1298**  
**1 (800) 378 1296**

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 603.233.3333

**FAX #:** 202-495-2000

Address: 1000 1st Ave

**Project Name :**

**Sampler Signature:**

[illegible]

| REMARKS          |       |       |                                        |
|------------------|-------|-------|----------------------------------------|
| Relinquished by: | Date: | Time: | Received by: Date: Time:               |
| Relinquished by: | Date: | Time: | Received by: Date: Time:               |
| Relinquished by: | Date: | Time: | Received at Laboratory by: Date: Time: |



NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

Dallas Division  
1548 Valwood Parkway  
Suite 118  
Carrollton, TX 75006  
Tel. (214) 400-0100  
Fax: (214) 484-2969

## ANALYTICAL AND QUALITY CONTROL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

01/23/1996

NET Job Number: 96.00129

Enclosed is the Analytical and Quality Control report for the following samples submitted to the Dallas Division of NET, Inc. for analysis. Reproduction of this analytical report is permitted only in its entirety.

| <u>Sample<br/>Number</u> | <u>Sample Description</u> | <u>Date<br/>Taken</u> | <u>Date<br/>Received</u> |
|--------------------------|---------------------------|-----------------------|--------------------------|
| 290103                   | MW-18                     | 01/04/1996            | 01/09/1996               |
| 290104                   | KWB-9                     | 01/04/1996            | 01/09/1996               |
| 290105                   | KWB-2A                    | 01/04/1996            | 01/09/1996               |
| 290106                   | KWB-11A                   | 01/04/1996            | 01/09/1996               |
| 290107                   | KWB-7                     | 01/04/1996            | 01/09/1996               |
| 290108                   | KWB-3A                    | 01/05/1996            | 01/09/1996               |
| 290109                   | KWB-1C                    | 01/05/1996            | 01/09/1996               |
| 290110                   | KWB-1A                    | 01/05/1996            | 01/09/1996               |
| 290111                   | MW-45                     | 01/05/1996            | 01/09/1996               |
| 290112                   | RA-2723                   | 01/08/1996            | 01/09/1996               |
| 290113                   | RA-4196                   | 01/08/1996            | 01/09/1996               |
| 290114                   | RA-4798                   | 01/08/1996            | 01/09/1996               |
| 290115                   | RA-3156                   | 01/08/1996            | 01/09/1996               |
| 290116                   | RA-3353                   | 01/08/1996            | 01/09/1996               |
| 290117                   | TRIP BLANK                |                       | 01/09/1996               |

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

**Holding Times:** All holding times were within method criteria.

**Method Blanks:** All method blanks were within quality control criteria.

**Instrument calibration:** All calibrations were within method quality control criteria.

**Analysis Comments:** No Unusual Comments

*Lisa A. Sanders*  
Lisa A. Sanders  
Project Coordinator





## ANALYTICAL REPORT

Darrell Moore  
 NAVAJO REFINING COMPANY  
 P.O. Box 159  
 Artesia, NM 88211-159

01/23/1996  
 Job No.: 96.00129

Page: 2

Project Name: QTRLY REMEDIATION-NAVAJO

290103 MW-18 Taken: 01/04/1996 10:00

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 420  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 206  | mg/L |
| Fluoride                      | 1.0  | mg/L |
| Sulfate                       | 819  | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 0.039   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.016   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.552   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 288     | mg/L |
| Chromium, Trace ICP   | 0.006   | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | <0.002  | mg/L |
| Iron, Trace ICP       | 0.038   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 188     | mg/L |
| Manganese, Trace ICP  | 0.080   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | 0.014   | mg/L |
| Nickel, Trace ICP     | 0.006   | mg/L |
| Potassium, Trace ICP  | 1.14    | mg/L |
| Selenium, Trace ICP   | <0.005  | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 64.0    | mg/L |
| Vanadium, Trace ICP   | 0.016   | mg/L |
| Zinc, Trace ICP       | <0.01   | mg/L |

EPA-8020 AQ (PRESERVED)

|                 |     |       |
|-----------------|-----|-------|
| Benzene         | <2  | ug/L  |
| Ethylbenzene    | <2  | ug/L  |
| Toluene         | <2  | ug/L  |
| Xylenes, Total  | <2  | ug/L  |
| MTBE            | <2  | ug/L  |
| SURR: a,a,a-TFT | 120 | % Rec |

BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

01/23/1996  
Job No.: 96.00129

Page: 3

Project Name: QTRLY REMEDIATION-NAVAJO

290103 MW-18

|                        |           |       |      |
|------------------------|-----------|-------|------|
| Benzo(k)fluoranthene   | <6.       | RLI   | ug/L |
| Benzo(g,h,i)perylene   | <6.       | RLI   | ug/L |
| Benzo(a)pyrene         | <6.       | RLI   | ug/L |
| Chrysene               | <6.       | RLI   | ug/L |
| Dibenzo(a,h)anthracene | <6.       | RLI   | ug/L |
| Fluoranthene           | <6.       | RLI   | ug/L |
| Fluorene               | <6.       | RLI   | ug/L |
| Indeno(1,2,3-cd)pyrene | <6.       | RLI   | ug/L |
| Naphthalene            | <6.       | RLI   | ug/L |
| Phenanthrene           | <6.       | RLI   | ug/L |
| Pyrene                 | <6.       | RLI   | ug/L |
| SURR: 2-Fluorobiphenyl | 49        | % Rec |      |
| SURR: Nitrobenzene-d5  | 38        | % Rec |      |
| SURR: Terphenyl-d14    | 81        | % Rec |      |
| Uranium, Total         | 1.8 +/- 0 |       | pg/L |

RLI - Reporting Limit Increased, sample volume < method specification





## ANALYTICAL REPORT

Darrell Moore  
 NAVAJO REFINING COMPANY  
 P.O. Box 159  
 Artesia, NM 88211-159

01/23/1996  
 Job No.: 96.00129

Page: 4

Project Name: QTRLY REMEDIATION-NAVAJO

290104 KWB-9 Taken: 01/04/96 11:00

|                                            |      |      |
|--------------------------------------------|------|------|
| Alkalinity, bicarb (CaCO <sub>3</sub> )    | 464  | mg/L |
| Alkalinity, carbonate (CaCO <sub>3</sub> ) | <5.0 | mg/L |
| Chloride                                   | 136  | mg/L |
| Fluoride                                   | 0.50 | mg/L |
| Sulfate                                    | 1410 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | <0.05   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.011   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.405   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 356     | mg/L |
| Chromium, Trace ICP   | 0.004   | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.005   | mg/L |
| Iron, Trace ICP       | 0.017   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 164     | mg/L |
| Manganese, Trace ICP  | 0.013   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | <0.002  | mg/L |
| Potassium, Trace ICP  | 0.763   | mg/L |
| Selenium, Trace ICP   | 0.007   | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 136     | mg/L |
| Vanadium, Trace ICP   | <0.01   | mg/L |
| Zinc, Trace ICP       | <0.01   | mg/L |

SSR

|                         |    |       |
|-------------------------|----|-------|
| EPA-8020 AQ (PRESERVED) |    |       |
| Benzene                 | <2 | ug/L  |
| Ethylbenzene            | <2 | ug/L  |
| Toluene                 | <2 | ug/L  |
| Xylenes, Total          | <2 | ug/L  |
| MTBE                    | <2 | ug/L  |
| SURR: a,a,a-TFT         | 89 | % Rec |

BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification  
 SSR - The sample was >4x level of spike, skewed recoveries exist.



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

01/23/1996  
Job No.: 96.00129

Page: 5

Project Name: QTRLY REMEDIATION-NAVAJO

290104 KWB-9

|                        |      |       |       |
|------------------------|------|-------|-------|
| Benzo(k)fluoranthene   | <6.  | RLI   | ug/L  |
| Benzo(g,h,i)perylene   | <6.  | RLI   | ug/L  |
| Benzo(a)pyrene         | <6.  | RLI   | ug/L  |
| Chrysene               | <6.  | RLI   | ug/L  |
| Dibenzo(a,h)anthracene | <6.  | RLI   | ug/L  |
| Fluoranthene           | <6.  | RLI   | ug/L  |
| Fluorene               | <6.  | RLI   | ug/L  |
| Indeno(1,2,3-cd)pyrene | <6.  | RLI   | ug/L  |
| Naphthalene            | <6.  | RLI   | ug/L  |
| Phenanthrene           | <6.  | RLI   | ug/L  |
| Pyrene                 | <6.  | RLI   | ug/L  |
| SURR: 2-Fluorobiphenyl | 54   | % Rec |       |
| SURR: Nitrobenzene-d5  | 44   | % Rec |       |
| SURR: Terphenyl-d14    | 37   | % Rec |       |
| Uranium, Total         | <1.0 |       | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
 NAVAJO REFINING COMPANY  
 P.O. Box 159  
 Artesia, NM 88211-159

01/23/1996  
 Job No.: 96.00129

Page: 6

Project Name: QTRLY REMEDIATION-NAVAJO

290105 KWB-2A Taken: 01/04/96 13:00

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 280  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 134  | mg/L |
| Fluoride                      | 0.96 | mg/L |
| Sulfate                       | 1730 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 2.19    | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.036   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.325   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 392     | mg/L |
| Chromium, Trace ICP   | 0.003   | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.016   | mg/L |
| Iron, Trace ICP       | 0.918   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 207     | mg/L |
| Manganese, Trace ICP  | 0.028   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | <0.002  | mg/L |
| Potassium, Trace ICP  | 0.774   | mg/L |
| Selenium, Trace ICP   | 0.011   | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 134     | mg/L |
| Vanadium, Trace ICP   | 0.022   | mg/L |
| Zinc, Trace ICP       | 0.018   | mg/L |

## EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 94 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
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Project Name: QTRLY REMEDIATION-NAVAJO

290105 KWB-2A

|                         |      |       |       |
|-------------------------|------|-------|-------|
| Benzo(k) Fluoranthene   | <6.  | RLI   | ug/L  |
| Benzo(g,h,i) perylene   | <6.  | RLI   | ug/L  |
| Benzo(a) pyrene         | <6.  | RLI   | ug/L  |
| Chrysene                | <6.  | RLI   | ug/L  |
| Dibenzo(a,h) anthracene | <6.  | RLI   | ug/L  |
| Fluoranthene            | <6.  | RLI   | ug/L  |
| Fluorene                | <6.  | RLI   | ug/L  |
| Indeno(1,2,3-cd) pyrene | <6.  | RLI   | ug/L  |
| Naphthalene             | <6.  | RLI   | ug/L  |
| Phenanthrene            | <6.  | RLI   | ug/L  |
| Pyrene                  | <6.  | RLI   | ug/L  |
| SURR: 2-Fluorobiphenyl  | 50   | % Rec |       |
| SURR: Nitrobenzene-d5   | 41   | % Rec |       |
| SURR: Terphenyl-d14     | 37   | % Rec |       |
| Uranium, Total          | <1.0 |       | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
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Project Name: QTRLY REMEDIATION-NAVAJO

290106 KWB-11A Taken: 01/04/96 16:00

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 490  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 610  | mg/L |
| Fluoride                      | 0.90 | mg/L |
| Sulfate                       | 1280 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 0.071   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.019   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.448   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 340     | mg/L |
| Chromium, Trace ICP   | <0.002  | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.016   | mg/L |
| Iron, Trace ICP       | 0.024   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 213     | mg/L |
| Manganese, Trace ICP  | 0.040   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | <0.002  | mg/L |
| Potassium, Trace ICP  | 0.683   | mg/L |
| Selenium, Trace ICP   | 0.006   | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 260     | mg/L |
| Vanadium, Trace ICP   | <0.01   | mg/L |
| Zinc, Trace ICP       | 0.022   | mg/L |

## EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 86 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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Project Name: QTRLY REMEDIATION-NAVAJO

290106 KWB-11A

|                        |      |     |       |
|------------------------|------|-----|-------|
| Benzo(k)fluoranthene   | <6.  | RLI | ug/L  |
| Benzo(g,h,i)perylene   | <6.  | RLI | ug/L  |
| Benzo(a)pyrene         | <6.  | RLI | ug/L  |
| Chrysene               | <6.  | RLI | ug/L  |
| Dibenzo(a,h)anthracene | <6.  | RLI | ug/L  |
| Fluoranthene           | <6.  | RLI | ug/L  |
| Fluorene               | <6.  | RLI | ug/L  |
| Indeno(1,2,3-cd)pyrene | <6.  | RLI | ug/L  |
| Naphthalene            | <6.  | RLI | ug/L  |
| Phenanthrene           | <6.  | RLI | ug/L  |
| Pyrene                 | <6.  | RLI | ug/L  |
| SURR: 2-Fluorobiphenyl | 47   |     | % Rec |
| SURR: Nitrobenzene-d5  | 42   |     | % Rec |
| SURR: Terphenyl-d14    | 35   |     | % Rec |
| Uranium, Total         | <1.0 |     | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



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Project Name: QTRLY REMEDIATION-NAVAJO

290107 KWB-7 Taken: 01/04/96 16:45

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 750  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 340  | mg/L |
| Fluoride                      | 1.1  | mg/L |
| Sulfate                       | 588  | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 0.210   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.017   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.493   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 247     | mg/L |
| Chromium, Trace ICP   | <0.002  | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.007   | mg/L |
| Iron, Trace ICP       | 0.118   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 176     | mg/L |
| Manganese, Trace ICP  | 2.38    | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | 0.021   | mg/L |
| Nickel, Trace ICP     | 0.044   | mg/L |
| Potassium, Trace ICP  | 0.755   | mg/L |
| Selenium, Trace ICP   | <0.005  | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 219     | mg/L |
| Vanadium, Trace ICP   | 0.021   | mg/L |
| Zinc, Trace ICP       | <0.01   | mg/L |

## EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 95 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



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Project Name: QTRLY REMEDIATION-NAVAJO

290107 KWB-7

|                        |      |     |       |
|------------------------|------|-----|-------|
| Benzo(k)fluoranthene   | <6.  | RLI | ug/L  |
| Benzo(g,h,i)perylene   | <6.  | RLI | ug/L  |
| Benzo(a)pyrene         | <6.  | RLI | ug/L  |
| Chrysene               | <6.  | RLI | ug/L  |
| Dibenzo(a,h)anthracene | <6.  | RLI | ug/L  |
| Fluoranthene           | <6.  | RLI | ug/L  |
| Fluorene               | <6.  | RLI | ug/L  |
| Indeno(1,2,3-cd)pyrene | <6.  | RLI | ug/L  |
| Naphthalene            | <6.  | RLI | ug/L  |
| Phenanthrene           | <6.  | RLI | ug/L  |
| Pyrene                 | <6.  | RLI | ug/L  |
| SURR: 2-Fluorobiphenyl | 68   | %   | Rec   |
| SURR: Nitrobenzene-d5  | 46   | %   | Rec   |
| SURR: Terphenyl-d14    | 51   | %   | Rec   |
| Uranium, Total         | <1.0 |     | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification





## ANALYTICAL REPORT

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Project Name: QTRIV REMEDIATION-NAVAJO

290108 KWB-3A Taken: 01/05/96 09:00

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 330  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 365  | mg/L |
| Fluoride                      | 0.4  | mg/L |
| Sulfate                       | 2420 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 0.098   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.014   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.234   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 514     | mg/L |
| Chromium, Trace ICP   | <0.002  | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.003   | mg/L |
| Iron, Trace ICP       | 0.042   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 223     | mg/L |
| Manganese, Trace ICP  | 0.007   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | <0.002  | mg/L |
| Potassium, Trace ICP  | 0.796   | mg/L |
| Selenium, Trace ICP   | 0.025   | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 387     | mg/L |
| Vanadium, Trace ICP   | 0.012   | mg/L |
| Zinc, Trace ICP       | <0.01   | mg/L |

## EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 96 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <7. | RLI | ug/L |
| Acenaphthylene       | <7. | RLI | ug/L |
| Anthracene           | <7. | RLI | ug/L |
| Benzo(a)anthracene   | <7. | RLI | ug/L |
| Benzo(b)fluoranthene | <7. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
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Project Name: QTRLY REMEDIATION-NAVAJO

290108 KWB-3A

|                          |      |     |       |
|--------------------------|------|-----|-------|
| Benzo (k) fluoranthene   | <7.  | RLI | ug/L  |
| Benzo (g,h,i) perylene   | <7.  | RLI | ug/L  |
| Benzo (a) pyrene         | <7.  | RLI | ug/L  |
| Chrysene                 | <7.  | RLI | ug/L  |
| Dibenzo (a,h) anthracene | <7.  | RLI | ug/L  |
| Fluoranthene             | <7.  | RLI | ug/L  |
| Fluorene                 | <7.  | RLI | ug/L  |
| Indeno (1,2,3-cd) pyrene | <7.  | RLI | ug/L  |
| Naphthalene              | <7.  | RLI | ug/L  |
| Phenanthrene             | <7.  | RLI | ug/L  |
| Pyrene                   | <7.  | RLI | ug/L  |
| SURR: 2-Fluorobiphenyl   | 50   |     | % Rec |
| SURR: Nitrobenzene-d5    | 40   |     | % Rec |
| SURR: Terphenyl d14      | 36   |     | % Rec |
| Uranium, Total           | <1.0 |     | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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Project Name: QTRLY REMEDIATION-NAVAJO

290109 KWB-1C Taken: 01/05/96 11:15

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 420  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 355  | mg/L |
| Fluoride                      | 1.0  | mg/L |
| Sulfate                       | 2630 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | <0.05   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.012   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.617   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 427     | mg/L |
| Chromium, Trace ICP   | 0.006   | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.011   | mg/L |
| Iron, Trace ICP       | 2.50    | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 318     | mg/L |
| Manganese, Trace ICP  | 0.176   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | 0.005   | mg/L |
| Potassium, Trace ICP  | 2.50    | mg/L |
| Selenium, Trace ICP   | <0.005  | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 289     | mg/L |
| Vanadium, Trace ICP   | <0.01   | mg/L |
| Zinc, Trace ICP       | 0.020   | mg/L |

## EPA-8020 AO (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | 20 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 92 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <7. | RLI | ug/L |
| Acenaphthylene       | <7. | RLI | ug/L |
| Anthracene           | <7. | RLI | ug/L |
| Benzo(a)anthracene   | <7. | RLI | ug/L |
| Benzo(b)fluoranthene | <7. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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NAVAJO REFINING COMPANY  
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Project Name: QTRLY REMEDIATION-NAVAJO

290109 KWB-1C Taken: 01/05/96 11:15

|                        |      |       |       |
|------------------------|------|-------|-------|
| Benzo(k)fluoranthene   | <7.  | RLI   | ug/L  |
| Benzo(g,h,i)perylene   | <7.  | RLI   | ug/L  |
| Benzo(a)pyrene         | <7.  | RLI   | ug/L  |
| Chrysene               | <7.  | RLI   | ug/L  |
| Dibenzo(a,h)anthracene | <7.  | RLI   | ug/L  |
| Fluoranthene           | <7.  | RLI   | ug/L  |
| Fluorene               | <7.  | RLI   | ug/L  |
| Indeno(1,2,3-cd)pyrene | <7.  | RLI   | ug/L  |
| Naphthalene            | <7.  | RLI   | ug/L  |
| Phenanthrene           | <7.  | RLI   | ug/L  |
| Pyrene                 | <7.  | RLI   | ug/L  |
| SURR: 2-Fluorobiphenyl | 64   | % Rec |       |
| SURR: Nitrobenzene-d5  | 63   | % Rec |       |
| SURR: Terphenyl-d14    | 73   | % Rec |       |
| Uranium, Total         | <1.0 |       | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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 NAVAJO REFINING COMPANY  
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Project Name: QTRLY REMEDIATION-NAVAJO

290110 KWB-1A Taken: 01/05/96 13:30

|                                            |      |      |
|--------------------------------------------|------|------|
| Alkalinity, bicarb (CaCO <sub>3</sub> )    | 430  | mg/L |
| Alkalinity, carbonate (CaCO <sub>3</sub> ) | <5.0 | mg/L |
| Chloride                                   | 390  | mg/L |
| Fluoride                                   | 1.1  | mg/L |
| Sulfate                                    | 2750 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | <0.05   | mg/L |
| Arsenic, Trace ICP    | <0.005  | mg/L |
| Barium, Trace ICP     | 0.008   | mg/L |
| Beryllium, Trace ICP  | <0.001  | mg/L |
| Boron, Trace ICP      | 0.826   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 479     | mg/L |
| Chromium, Trace ICP   | <0.002  | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.011   | mg/L |
| Iron, Trace ICP       | 0.011   | mg/L |
| Lead, Trace ICP       | <0.005  | mg/L |
| Magnesium, Trace ICP  | 405     | mg/L |
| Manganese, Trace ICP  | 0.212   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | 0.007   | mg/L |
| Nickel, Trace ICP     | 0.006   | mg/L |
| Potassium, Trace ICP  | 1.56    | mg/L |
| Selenium, Trace ICP   | 0.007   | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 339     | mg/L |
| Vanadium, Trace ICP   | 0.017   | mg/L |
| Zinc, Trace ICP       | <0.01   | mg/L |

|                         |    |       |
|-------------------------|----|-------|
| EPA 8020 AQ (PRESERVED) |    |       |
| Benzene                 | <2 | ug/L  |
| Ethylbenzene            | <2 | ug/L  |
| Toluene                 | <2 | ug/L  |
| Xylenes, Total          | <2 | ug/L  |
| MTBE                    | <2 | ug/L  |
| SURR: a,a,a-TFT         | 89 | % Rec |

## BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <7. | RLI | ug/L |
| Acenaphthylene       | <7. | RLI | ug/L |
| Anthracene           | <7. | RLI | ug/L |
| Benzo(a)anthracene   | <7. | RLI | ug/L |
| Benzo(b)fluoranthene | <7. | RLI | ug/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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Project Name: QTRLY REMEDIATION-NAVAJO

290110 KWB-1A

|                        |      |     |       |
|------------------------|------|-----|-------|
| Benzo(k)fluoranthene   | <7.  | RLI | ug/L  |
| Benzo(g,h,i)perylene   | <7.  | RLI | ug/L  |
| Benzo(a)pyrene         | <7.  | RLI | ug/L  |
| Chrysene               | <7.  | RLI | ug/L  |
| Dibenzo(a,h)anthracene | <7.  | RLI | ug/L  |
| Fluoranthene           | <7.  | RLI | ug/L  |
| Fluorene               | <7.  | RLI | ug/L  |
| Indeno(1,2,3-cd)pyrene | <7.  | RLI | ug/L  |
| Naphthalene            | <7.  | RLI | ug/L  |
| Phenanthrene           | <7.  | RLI | ug/L  |
| Pyrene                 | <7.  | RLI | ug/L  |
| SURR: 2-Fluorobiphenyl | 62   | %   | Rec   |
| SURR: Nitrobenzene-d5  | 53   | %   | Rec   |
| SURR: Terphenyl-d14    | 42   | %   | Rec   |
| Uranium, Total         | <1.0 |     | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

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290111 MW-45 Taken: 01/05/96 14:10

|                               |      |      |
|-------------------------------|------|------|
| Alkalinity, bicarb (CACO3)    | 240  | mg/L |
| Alkalinity, carbonate (CACO3) | <5.0 | mg/L |
| Chloride                      | 775  | mg/L |
| Fluoride                      | 2.1  | mg/L |
| Sulfate                       | 3140 | mg/L |

|                       |         |      |
|-----------------------|---------|------|
| Aluminum, Trace ICP   | 8.62    | mg/L |
| Arsenic, Trace ICP    | 0.017   | mg/L |
| Barium, Trace ICP     | 0.194   | mg/L |
| Beryllium, Trace ICP  | 0.001   | mg/L |
| Boron, Trace ICP      | 0.309   | mg/L |
| Cadmium, Trace ICP    | <0.001  | mg/L |
| Calcium, Trace ICP    | 731     | mg/L |
| Chromium, Trace ICP   | 0.026   | mg/L |
| Cobalt, Trace ICP     | <0.005  | mg/L |
| Copper, Trace ICP     | 0.045   | mg/L |
| Iron, Trace ICP       | 7.46    | mg/L |
| Lead, Trace ICP       | 0.189   | mg/L |
| Magnesium, Trace ICP  | 393     | mg/L |
| Manganese, Trace ICP  | 0.581   | mg/L |
| Mercury, CVAA         | <0.0002 | mg/L |
| Molybdenum, Trace ICP | <0.005  | mg/L |
| Nickel, Trace ICP     | 0.022   | mg/L |
| Potassium, Trace ICP  | 12.3    | mg/L |
| Selenium, Trace ICP   | <0.005  | mg/L |
| Silver, Trace ICP     | <0.002  | mg/L |
| Sodium, Trace ICP     | 514     | mg/L |
| Vanadium, Trace ICP   | 0.015   | mg/L |
| Zinc, Trace ICP       | 0.046   | mg/L |

EPA-8020 AQ (PRESERVED)

|                 |     |     |       |
|-----------------|-----|-----|-------|
| Benzene         | <20 | EDL | ug/L  |
| Ethylbenzene    | <20 | EDL | ug/L  |
| Toluene         | <20 | EDL | ug/L  |
| Xylenes, Total  | <20 | EDL | ug/L  |
| MTBE            | <20 | EDL | ug/L  |
| SURR: a,a,a-TFT | 111 |     | % Rec |

BASE/NEUTRALS - 8270 AQUEOUS

|                      |     |     |      |
|----------------------|-----|-----|------|
| Acenaphthene         | <6. | RLI | ug/L |
| Acenaphthylene       | <6. | RLI | ug/L |
| Anthracene           | <6. | RLI | ug/L |
| Benzo(a)anthracene   | <6. | RLI | ug/L |
| Benzo(b)fluoranthene | <6. | RLI | ug/L |

EDL - Elevated Detection Limit due to matrix interference.

RLI - Reporting Limit Increased, sample volume < method specification



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

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Project Name: QTRLY REMEDIATION-NAVAJO

290111 MW-45

|                        |      |     |       |
|------------------------|------|-----|-------|
| Benzo(k)fluoranthene   | <6.  | RLI | ug/L  |
| Benzo(g,h,i)perylene   | <6.  | RLI | ug/L  |
| Benzo(a)pyrene         | <6.  | RLI | ug/L  |
| Chrysene               | <6.  | RLI | ug/L  |
| Dibenzo(a,h)anthracene | <6.  | RLI | ug/L  |
| Fluoranthene           | <6.  | RLI | ug/L  |
| Fluorene               | <6.  | RLI | ug/L  |
| Indeno(1,2,3-cd)pyrene | <6.  | RLI | ug/L  |
| Naphthalene            | <6.  | RLI | ug/L  |
| Phenanthrene           | <6.  | RLI | ug/L  |
| Pyrene                 | <6.  | RLI | ug/L  |
| SURR: 2-Fluorobiphenyl | 47   | %   | Rec   |
| SURR: Nitrobenzene-d5  | 35   | %   | Rec   |
| SURR: Terphenyl-d14    | 34   | %   | Rec   |
| Uranium, Total         | <1.0 |     | pCi/L |

RLI - Reporting Limit Increased, sample volume < method specification





## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

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Project Name: QTRLY REMEDIATION-NAVAJO

290112 RA-2723 Taken: 01/08/96 10:30

EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 99 | % Rec |



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

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Project Name: QTRLY REMEDIATION-NAVAJO

290113 RA-4196 Taken: 01/08/96 10:45

EPA-8020 AQ (PRESERVED)

Benzene

<2

ug/L

Ethylbenzene

<2

ug/L

Toluene

<2

ug/L

Xylenes, Total

<2

ug/L

MTBE

<2

ug/L

SURR: a,a,a-TFT

88

% Rec



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

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Project Name: QTRLY REMEDIATION-NAVAJO  
290114 RA-4798 Taken: 01/08/96 11:00

EPA-8020 AQ (PRESERVED)

|                 |     |       |
|-----------------|-----|-------|
| Benzene         | <2  | ug/L  |
| Ethylbenzene    | <2  | ug/L  |
| Toluene         | <2  | ug/L  |
| Xylenes, Total  | <2  | ug/L  |
| MTBE            | <2  | ug/L  |
| SURR: a,a,a-TFT | 117 | % Rec |



## ANALYTICAL REPORT

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Project Name: QTRLY REMEDIATION-NAVAJO

290115 RA-3156 Taken: 01/08/96 11:15

EPA-8020 AQ (PRESERVED)

Benzene

<2

ug/L

Ethylbenzene

<2

ug/L

Toluene

<2

ug/L

Xylenes, Total

<2

ug/L

MTBE

<2

ug/L

SURR: a,a,a-TFT

87

% Rec



## ANALYTICAL REPORT

Darrell Moore  
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Project Name: QTRLY REMEDIATION-NAVAJO

290116 RA-3353 Taken: 01/08/96 11:30

EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 98 | % Rec |



## ANALYTICAL REPORT

Darrell Moore  
NAVAJO REFINING COMPANY  
P.O. Box 159  
Artesia, NM 88211-159

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Project Name: QTRLY REMEDIATION-NAVAJO

290117 TRIP BLANK

EPA-8020 AQ (PRESERVED)

|                 |    |       |
|-----------------|----|-------|
| Benzene         | <2 | ug/L  |
| Ethylbenzene    | <2 | ug/L  |
| Toluene         | <2 | ug/L  |
| Xylenes, Total  | <2 | ug/L  |
| MTBE            | <2 | ug/L  |
| SURR: a,a,a-TFT | 94 | % Rec |



# QUALITY CONTROL REPORT Continuing Calibration Verification (CCV)

JOB NUMBER: 96.00129

| PARAMETER             | ANALYST | DATE<br>ANALYZED | METHOD    | CCV<br>RESULT | CCV<br>TRUE<br>CONCENTRATION | % REC. | FLAG |
|-----------------------|---------|------------------|-----------|---------------|------------------------------|--------|------|
| Fluoride              | kwo     | 01/10/1996       | SM-4500F. | 10.3          | 10.0                         | 103    | NA   |
| Sulfate               | grd     | 01/16/1996       | E-375.4   | 9.4           | 10.0                         | 94     | NA   |
| Aluminum, Trace ICP   | jmd     | 01/11/1996       | S-6010A   | 1.02          | 1.00                         | 102    | NA   |
| Arsenic, Trace ICP    | jmd     | 01/11/1996       | S-6010A   | 1.01          | 1.00                         | 101    | NA   |
| Barium, Trace ICP     | jmd     | 01/11/1996       | S-6010A   | 0.993         | 1.00                         | 99     | NA   |
| Beryllium, Trace ICP  | jmd     | 01/11/1996       | S-6010A   | 0.999         | 1.00                         | 100    | NA   |
| Boron, Trace ICP      | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Cadmium, Trace ICP    | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Calcium, Trace ICP    | jmd     | 01/11/1996       | S-6010A   | 11.4          | 11.0                         | 104    | NA   |
| Chromium, Trace ICP   | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Cobalt, Trace ICP     | jmd     | 01/11/1996       | S-6010A   | 1.01          | 1.00                         | 101    | NA   |
| Copper, Trace ICP     | jmd     | 01/11/1996       | S-6010A   | 0.995         | 1.00                         | 100    | NA   |
| Iron, Trace ICP       | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Lead, Trace ICP       | jmd     | 01/11/1996       | S-6010A   | 1.01          | 1.00                         | 101    | NA   |
| Magnesium, Trace ICP  | jmd     | 01/11/1996       | S-6010A   | 10.3          | 10.0                         | 103    | NA   |
| Manganese, Trace ICP  | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Mercury, CVAA         | cbw     | 01/15/1996       | S-7470A   | 0.47          | 0.50                         | 94     | NA   |
| Molybdenum, Trace ICP | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Nickel, Trace ICP     | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Potassium, Trace ICP  | jmd     | 01/11/1996       | S-6010A   | 10.1          | 10.0                         | 101    | NA   |
| Selenium, Trace ICP   | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |
| Silver, Trace ICP     | jmd     | 01/11/1996       | S-6010A   | 1.00          | 1.00                         | 100    | NA   |

## Method References and Codes

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

E-100 through 493: "Methods for Chemical Analysis of Water & Wastes",  
U.S. EPA, 600/4-75-020, rev. 1993.

E-601 through 626: "Guidelines Establishing Test Procedures for the  
Analysis of Pollutants", U.S. EPA, 40CFR, Part 136,  
rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA  
SW-846, 3rd Edition, 1986.

A: "Standard Methods for the Examination of water and  
Wastewater", 16th Edition, APHA, 1985.

SM: "Standard Methods for the Examination of Water and  
Wastewater", 12th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

\*: Other Reference



**QUALITY CONTROL REPORT**  
**Continuing Calibration Verification**  
**(CCV)**

JOB NUMBER: 96.00129

| PARAMETER                    | ANALYST | DATE ANALYZED | METHOD  | CCV RESULT | CCV TRUE CONCENTRATION | % REC. | FLAG |
|------------------------------|---------|---------------|---------|------------|------------------------|--------|------|
| Sodium, Trace ICP            | jmd     | 01/11/1996    | S-6010A | 10.1       | 10.0                   | 101    | NA   |
| Vanadium, Trace ICP          | jmd     | 01/11/1996    | S-6010A | 1.00       | 1.00                   | 100    | NA   |
| Zinc, Trace ICP              | jmd     | 01/11/1996    | S-6010A | 0.994      | 1.00                   | 99     | NA   |
| EPA-8020 AQ (PRESERVED)      |         |               | S-8020M |            |                        |        |      |
| Benzene                      | bgm     | 01/13/1996    | S-8020M | 21         | 20                     | 105    | NA   |
| Ethylbenzene                 | bgm     | 01/13/1996    | S-8020M | 31         | 30                     | 105    | NA   |
| MTBE                         | bgm     | 01/13/1996    | S-8020M | 39         | 40                     | 98     | NA   |
| Toluene                      | bgm     | 01/13/1996    | S-8020M | 20         | 20                     | 100    | NA   |
| Xylenes, Total               | bgm     | 01/13/1996    | S-8020M | 63         | 60                     | 105    | NA   |
| EPA-8020 AQ (PRESERVED)      |         |               | S-8020M |            |                        |        |      |
| Benzene                      | tcc     | 01/14/1996    | S-8020M | 20         | 20                     | 100    | NA   |
| Ethylbenzene                 | tcc     | 01/14/1996    | S-8020M | 19         | 20                     | 95     | NA   |
| MTBE                         | tcc     | 01/14/1996    | S-8020M | 35         | 40                     | 90     | NA   |
| Toluene                      | tcc     | 01/14/1996    | S-8020M | 18         | 20                     | 90     | NA   |
| Xylenes, Total               | tcc     | 01/14/1996    | S-8020M | 62         | 60                     | 103    | NA   |
| EPA-8020 AQ (PRESERVED)      |         |               | S-8020M |            |                        |        |      |
| Benzene                      | tcc     | 01/15/1996    | S-8020M | 22         | 20                     | 110    | NA   |
| Ethylbenzene                 | tcc     | 01/15/1996    | S-8020M | 22         | 20                     | 110    | NA   |
| MTBE                         | tcc     | 01/15/1996    | S-8020M | 37         | 40                     | 93     | NA   |
| Toluene                      | tcc     | 01/15/1996    | S-8020M | 18         | 20                     | 90     | NA   |
| Xylenes, Total               | tcc     | 01/15/1996    | S-8020M | 67         | 60                     | 112    | NA   |
| BASE/NEUTRALS - 8270 AQUEOUS |         |               | S-8270A |            |                        |        |      |

Method References and Codes

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

E-200 through 493: "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

E-601 through 625: "Guidelines Establishing Test Procedures for the Analysis of Pollutants", U.S. EPA, 40CFR, Part 136, rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd Edition, 1986.

A: "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, 1985.

SM: "Standard Methods for the Examination of Water and Wastewater", 18th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

\*: Other Reference





# QUALITY CONTROL REPORT Continuing Calibration Verification (CCV)

JOB NUMBER: 96.00129

| PARAMETER                    | ANALYST | DATE<br>ANALYZED | METHOD  | CCV<br>RESULT | CCV                   | % REC. | FLAG |
|------------------------------|---------|------------------|---------|---------------|-----------------------|--------|------|
|                              |         |                  |         |               | TRUE<br>CONCENTRATION |        |      |
| Acenaphthene                 | slw     | 01/03/1996       | S-8270A | 47.2          | 50.0                  | 94     | NA   |
| Acenaphthylene               | slw     | 01/03/1996       | S-8270A | 51.0          | 50.0                  | 102    | NA   |
| Anthracene                   | slw     | 01/03/1996       | S-8270A | 49.4          | 50.0                  | 99     | NA   |
| Benzo (a) anthracene         | slw     | 01/03/1996       | S-8270A | 47.7          | 50.0                  | 95     | NA   |
| Benzo (a) pyrene             | slw     | 01/03/1996       | S-8270A | 43.5          | 50.0                  | 87     | NA   |
| Benzo (b) fluoranthene       | slw     | 01/03/1996       | S-8270A | 41.3          | 50.0                  | 83     | NA   |
| Benzo (k) fluoranthene       | slw     | 01/03/1996       | S-8270A | 47.1          | 50.0                  | 94     | NA   |
| Benzo (g,h,i) perylene       | slw     | 01/03/1996       | S-8270A | 55.4          | 50.0                  | 111    | NA   |
| Chrysene                     | slw     | 01/03/1996       | S-8270A | 43.6          | 50.0                  | 87     | NA   |
| Dibenzo (a,h) anthracene     | slw     | 01/03/1996       | S-8270A | 59.0          | 50.0                  | 118    | NA   |
| Fluoranthene                 | slw     | 01/03/1996       | S-8270A | 54.9          | 50.0                  | 110    | NA   |
| Fluorene                     | slw     | 01/03/1996       | S-8270A | 50.8          | 50.0                  | 102    | NA   |
| Indeno (1,2,3-cd) pyrene     | slw     | 01/03/1996       | S-8270A | 50.6          | 50.0                  | 101    | NA   |
| Naphthalene                  | slw     | 01/03/1996       | S-8270A | 48.8          | 50.0                  | 98     | NA   |
| Phenanthrene                 | slw     | 01/03/1996       | S-8270A | 49.0          | 50.0                  | 98     | NA   |
| Pyrene                       | slw     | 01/03/1996       | S-8270A | 54.9          | 50.0                  | 110    | NA   |
| BASE/NEUTRALS - 8270 AQUEOUS |         |                  | S-8270A |               |                       |        |      |
| Acenaphthene                 | slw     | 01/03/1996       | S-8270A | 52.8          | 50.0                  | 106    | NA   |
| Acenaphthylene               | slw     | 01/03/1996       | S-8270A | 51.7          | 50.0                  | 103    | NA   |
| Anthracene                   | slw     | 01/03/1996       | S-8270A | 52.6          | 50.0                  | 105    | NA   |
| Benzo (a) anthracene         | slw     | 01/03/1996       | S-8270A | 48.4          | 50.0                  | 97     | NA   |
| Benzo (a) pyrene             | slw     | 01/03/1996       | S-8270A | 50.3          | 50.0                  | 101    | NA   |

## Method References and Codes

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E-100 through 493: "Methods for Chemical Analysis of Water & Wastes",  
U.S. EPA, 600/4-79-020, rev. 1983.

E-601 through 625: "Guidelines Establishing Test Procedures for the  
Analysis of Pollutants", U.S. EPA, 40CFR, Part 136,  
rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA  
SW-846, 3rd Edition, 1986.

A: "Standard Methods for the Examination of Water and  
Wastewater", 16th Edition, APHA, 1985.

SM: "Standard Methods for the Examination of Water and  
Wastewater", 18th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

\*: Other Reference



# **QUALITY CONTROL REPORT** **Continuing Calibration Verification** **(CCV)**

JOB NUMBER: 96.00129

| PARAMETER                    | ANALYST | DATE<br>ANALYZED | METHOD  | CCV<br>RESULT | CCV<br>TRUE<br>CONCENTRATION | % REC. | FLAG |
|------------------------------|---------|------------------|---------|---------------|------------------------------|--------|------|
| Benzo (b) fluoranthene       | slw     | 01/09/1996       | S-8270A | 51.8          | 50.0                         | 104    | NA   |
| Benzo (k) fluoranthene       | slw     | 01/09/1996       | S-8270A | 46.9          | 50.0                         | 94     | NA   |
| Benzo (g, h, i) perylene     | slw     | 01/09/1996       | S-8270A | 51.3          | 50.0                         | 103    | NA   |
| Chrysene                     | slw     | 01/09/1996       | S-8270A | 51.5          | 50.0                         | 103    | NA   |
| Dibenzo (a, h) anthracene    | slw     | 01/09/1996       | S-8270A | 48.8          | 50.0                         | 98     | NA   |
| Fluoranthene                 | slw     | 01/09/1996       | S-8270A | 51.0          | 50.0                         | 102    | NA   |
| Fluorene                     | slw     | 01/09/1996       | S-8270A | 56.1          | 50.0                         | 112    | NA   |
| Indeno (1,2,3-cd) pyrene     | slw     | 01/09/1996       | S-8270A | 51.3          | 50.0                         | 103    | NA   |
| Naphthalene                  | slw     | 01/09/1996       | S-8270A | 52.7          | 50.0                         | 105    | NA   |
| Phenanthrene                 | slw     | 01/09/1996       | S-8270A | 50.6          | 50.0                         | 101    | NA   |
| Pyrene                       | slw     | 01/09/1996       | S-8270A | 44.9          | 50.0                         | 90     | NA   |
| BASE/NEUTRALS - 8270 AQUEOUS |         |                  | S-8270A |               |                              |        |      |
| Acenaphthene                 | slw     | 01/15/1996       | S-8270A | 55.3          | 50.0                         | 111    | NA   |
| Acenaphthylene               | slw     | 01/15/1996       | S-8270A | 54.2          | 50.0                         | 108    | NA   |
| Anthracene                   | slw     | 01/15/1996       | S-8270A | 56.2          | 50.0                         | 112    | NA   |
| Benzo (a) anthracene         | slw     | 01/15/1996       | S-8270A | 51.6          | 50.0                         | 103    | NA   |
| Benzo (a) pyrene             | slw     | 01/15/1996       | S-8270A | 52.9          | 50.0                         | 106    | NA   |
| Benzo (b) fluoranthene       | slw     | 01/15/1996       | S-8270A | 42.5          | 50.0                         | 85     | NA   |
| Benzo (k) fluoranthene       | slw     | 01/15/1996       | S-8270A | 57.8          | 50.0                         | 116    | NA   |
| Benzo (g, h, i) perylene     | slw     | 01/15/1996       | S-8270A | 52.4          | 50.0                         | 105    | NA   |
| Chrysene                     | slw     | 01/15/1996       | S-8270A | 51.3          | 50.0                         | 103    | NA   |
| Dibenzo (a, h) anthracene    | slw     | 01/15/1996       | S-8270A | 55.1          | 50.0                         | 110    | NA   |

## Method References and Codes

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

E-100 through 493: "Methods for Chemical Analysis of Water & Wastes",  
U.S. EPA, 600/4-79-020. rev. 1983.

E-601 through 625: "Guidelines Establishing Test Procedures for the  
Analysis of Pollutants", U.S. EPA, 40CFR, Part 136,  
rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA  
SW-846, 3rd Edition, 1984.

A: "Standard Methods for the Examination of Water and  
Wastewater", 16th Edition, APEA, 1985.

SM: "Standard Methods for the Examination of Water and  
Wastewater", 18th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

?: Other Reference



**QUALITY CONTROL REPORT**  
**Continuing Calibration Verification**  
**(CCV)**

JOB NUMBER: 96.00129

| PARAMETER              | ANALYST | DATE<br>ANALYZED | METHOD  | CCV<br>RESULT | CCV<br>TRUE   | % REC. | FLAG |
|------------------------|---------|------------------|---------|---------------|---------------|--------|------|
|                        |         |                  |         |               | CONCENTRATION |        |      |
| Fluoranthene           | slw     | 01/15/1996       | S-8270A | 53.9          | 50.0          | 108    | NA   |
| Fluorene               | slw     | 01/15/1996       | S-8270A | 53.5          | 50.0          | 107    | NA   |
| Indeno(1,2,3-cd)pyrene | slw     | 01/15/1996       | S-8270A | 55.1          | 50.0          | 110    | NA   |
| Naphthalene            | slw     | 01/15/1996       | S-8270A | 55.1          | 50.0          | 110    | NA   |
| Phenanthrene           | slw     | 01/15/1996       | S-8270A | 50.4          | 50.0          | 101    | NA   |
| Pyrene                 | slw     | 01/15/1996       | S-8270A | 55.4          | 50.0          | 111    | NA   |

Method References and Codes

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

E-100 through 493: "Methods for Chemical Analysis of Water & Wastes",  
U.S. EPA, 600/4-79-020, rev. 1983.

E-601 through 625: "Guidelines Establishing Test Procedures for the  
Analysis of Pollutants", U.S. EPA, 40CFR, Part 136,  
rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA  
SW-846, 3rd Edition, 1986.

A: "Standard Methods for the Examination of Water and  
Wastewater", 16th Edition, APHA, 1985.

SM: "Standard Methods for the Examination of Water and  
Wastewater", 16th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

\*: Other Reference



# QUALITY CONTROL REPORT BLANKS

JOB NUMBER: 96.00129

| PARAMETER                               | DATE       | BLANK   | UNITS | REPORTING | FLAG |
|-----------------------------------------|------------|---------|-------|-----------|------|
|                                         | ANALYZED   |         |       | LIMIT     |      |
| Alkalinity, bicarb (CaCO <sub>3</sub> ) | 01/16/1996 | <5.0    | mg/L  | 5.0       | NA   |
| Chloride                                | 01/16/1996 | <5.0    | mg/L  | 5.0       | NA   |
| Fluoride                                | 01/10/1996 | <0.1    | mg/L  | 0.10      | NA   |
| Sulfate                                 | 01/16/1996 | <5.0    | mg/L  | 5.0       | NA   |
| Aluminum, Trace ICP                     | 01/11/1996 | <0.05   | mg/L  | 0.05      | NA   |
| Arsenic, Trace ICP                      | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Barium, Trace ICP                       | 01/11/1996 | <0.001  | mg/L  | 0.001     | NA   |
| Beryllium, Trace ICP                    | 01/11/1996 | <0.001  | mg/L  | 0.001     | NA   |
| Boron, Trace ICP                        | 01/11/1996 | <0.01   | mg/L  | 0.01      | NA   |
| Cadmium, Trace ICP                      | 01/11/1996 | <0.001  | mg/L  | 0.001     | NA   |
| Calcium, Trace ICP                      | 01/11/1996 | <0.50   | mg/L  | 0.50      | NA   |
| Chromium, Trace ICP                     | 01/11/1996 | <0.002  | mg/L  | 0.002     | NA   |
| Cobalt, Trace ICP                       | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Copper, Trace ICP                       | 01/11/1996 | <0.002  | mg/L  | 0.002     | NA   |
| Iron, Trace ICP                         | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Lead, Trace ICP                         | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Magnesium, Trace ICP                    | 01/11/1996 | <0.05   | mg/L  | 0.05      | NA   |
| Manganese, Trace ICP                    | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Mercury, CVAA                           | 01/15/1996 | <0.0002 | mg/L  | 0.0002    | NA   |
| Molybdenum, Trace ICP                   | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Nickel, Trace ICP                       | 01/11/1996 | <0.002  | mg/L  | 0.002     | NA   |
| Potassium, Trace ICP                    | 01/11/1996 | <0.50   | mg/L  | 0.50      | NA   |
| Selenium, Trace ICP                     | 01/11/1996 | <0.005  | mg/L  | 0.005     | NA   |
| Silver, Trace ICP                       | 01/11/1996 | <0.002  | mg/L  | 0.002     | NA   |
| Sodium, Trace ICP                       | 01/11/1996 | <1.0    | mg/L  | 1.0       | NA   |
| Vanadium, Trace ICP                     | 01/11/1996 | <0.01   | mg/L  | 0.01      | NA   |
| Zinc, Trace ICP                         | 01/11/1996 | <0.01   | mg/L  | 0.01      | NA   |
| EPA-8020 AQ (PRESERVED)                 |            |         |       |           |      |
| Benzene                                 | 01/13/1996 | <2      | ug/L  | 2         | NA   |
| Ethylbenzene                            | 01/13/1996 | <2      | ug/L  | 2         | NA   |
| MTBE                                    | 01/13/1996 | <2      | ug/L  | 2         | NA   |
| Toluene                                 | 01/13/1996 | <2      | ug/L  | 2         | NA   |
| Xylenes, Total                          | 01/13/1996 | <2      | ug/L  | 2         | NA   |
| EPA-8020 AQ (PRESERVED)                 |            |         |       |           |      |
| Benzene                                 | 01/14/1996 | <2      | ug/L  | 2         | NA   |
| Ethylbenzene                            | 01/14/1996 | <2      | ug/L  | 2         | NA   |
| MTBE                                    | 01/14/1996 | <2      | ug/L  | 2         | NA   |
| Toluene                                 | 01/14/1996 | <2      | ug/L  | 2         | NA   |

## Advisory Control Limits for Blanks

Metals/Wet Chemistry/Conventionals/GC - All compounds should be less than the Reporting Limit.

GC/MS Semi-Volatiles - All compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the Reporting Limit.

GC/MS Volatiles - Toluene, Methylene chloride, Acetone and Chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.



# QUALITY CONTROL REPORT BLANKS

JOB NUMBER: 96.00129

| PARAMETER                    | DATE       | BLANK | UNITS | REPORTING | FLAG |
|------------------------------|------------|-------|-------|-----------|------|
|                              | ANALYZED   |       |       | LIMIT     |      |
| Xylenes, Total               | 01/14/1996 | <2    | ug/L  | 2         | NA   |
| EPA-8020 AQ (PRESERVED)      |            |       |       |           |      |
| Benzene                      | 01/15/1996 | <2    | ug/L  | 2         | NA   |
| Ethylbenzene                 | 01/15/1996 | <2    | ug/L  | 2         | NA   |
| MIBK                         | 01/15/1996 | <2    | ug/L  | 2         | NA   |
| Toluene                      | 01/15/1996 | <2    | ug/L  | 2         | NA   |
| Xylenes, Total               | 01/15/1996 | <2    | ug/L  | 2         | NA   |
| BASE/NEUTRALS - 8270 AQUEOUS |            |       |       |           |      |
| Acenaphthene                 | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Acenaphthylene               | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Anthracene                   | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Benzo(a)anthracene           | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Benzo(b)fluoranthene         | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Benzo(k)fluoranthene         | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Benzo(g,h,i)perylene         | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Benzo(a)pyrene               | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Chrysene                     | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Mibenzo(a,h)anthracene       | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Fluoranthene                 | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Fluorene                     | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Indeno(1,2,3-cd)pyrene       | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Naphthalene                  | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Phenanthrene                 | 01/05/1996 | <5    | ug/L  | 5         | NA   |
| Pyrene                       | 01/05/1996 | <5    | ug/L  | 5         | NA   |

## Advisory Control Limits for Blanks

Metals/Wet Chemistry/Conventionals/GC - All compounds should be less than the Reporting Limit.

GC/MS Semi-Volatiles - All compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the Reporting Limit.

GC/MS Volatiles - Toluene, Methylene chloride, Acetone and Chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.



**QUALITY CONTROL REPORT**  
**Laboratory Control Sample**  
**(LCS)**

JOB NUMBER: 96.00129

| PARAMETER                               | LCS<br>RESULT | TRUE<br>CONC. | LCS<br>% REC. | FLAG |
|-----------------------------------------|---------------|---------------|---------------|------|
| Alkalinity, bicarb (CaCO <sub>3</sub> ) | 2500          | 2500          | 100           |      |
| Chloride                                | 510           | 500           | 102           |      |
| Fluoride                                | 1.04          | 1.0           | 104           |      |
| Sulfate                                 | 19.2          | 20.0          | 96            |      |
| Aluminum, Trace ICP                     | 0.996         | 1.00          | 100           |      |
| Arsenic, Trace ICP                      | 0.989         | 1.00          | 99            |      |
| Barium, Trace ICP                       | 0.963         | 1.00          | 96            |      |
| Beryllium, Trace ICP                    | 0.962         | 1.00          | 96            |      |
| Boron, Trace ICP                        | 0.955         | 1.00          | 96            |      |
| Cadmium, Trace ICP                      | 0.961         | 1.00          | 96            |      |
| Calcium, Trace ICP                      | 11.0          | 10.0          | 110           |      |
| Chromium, Trace ICP                     | 0.963         | 1.00          | 96            |      |
| Cobalt, Trace ICP                       | 0.972         | 1.00          | 97            |      |
| Copper, Trace ICP                       | 0.950         | 1.00          | 95            |      |
| Iron, Trace ICP                         | 0.949         | 1.00          | 95            |      |
| Lead, Trace ICP                         | 0.968         | 1.00          | 97            |      |
| Magnesium, Trace ICP                    | 10.0          | 10.0          | 100           |      |
| Manganese, Trace ICP                    | 0.978         | 1.00          | 98            |      |
| Mercury, CVAA                           | 0.43          | 0.50          | 86            |      |
| Molybdenum, Trace ICP                   | 0.976         | 1.00          | 98            |      |
| Nickel, Trace ICP                       | 0.969         | 1.00          | 97            |      |
| Potassium, Trace ICP                    | 9.75          | 10.0          | 98            |      |
| Selenium, Trace ICP                     | 0.960         | 1.00          | 96            |      |
| Silver, Trace ICP                       | 0.950         | 1.00          | 95            |      |
| Sodium, Trace ICP                       | 9.69          | 10.0          | 97            |      |
| Vanadium, Trace ICP                     | 0.977         | 1.00          | 98            |      |
| Zinc, Trace ICP                         | 0.957         | 1.00          | 96            |      |
| EPA-8020 AQ (PRESERVED)                 |               |               |               |      |
| Benzene                                 | 24            | 20            | 120           |      |
| Ethylbenzene                            | 26            | 20            | 130           |      |
| MTBP                                    | 36            | 40            | 90            |      |
| Toluene                                 | 24            | 20            | 120           |      |
| Xylenes, Total                          | 79            | 60            | 132           |      |
| BASE/NEUTRALS - 8270 AQUEOUS            |               |               |               |      |
| Acenaphthene                            | 79.4          | 100           | 79            |      |
| Pyrene                                  | 106           | 100           | 106           |      |

Advisory Control Limits for LCS

Inorganic Parameters - The LCS recovery should be 80-120%.



**QUALITY CONTROL REPORT**  
**Matrix Spike / Matrix Spike Duplicate**  
**(MS / MSD)**

JOB NUMBER: 96.00129

| PARAMETER                               | SAMPLE<br>RESULT | MS<br>RESULT | MSD<br>RESULT | SPIKE<br>AMOUNT | MS<br>% REC. | MSD<br>% REC. | MS/MSD<br>RPD | FLAG |
|-----------------------------------------|------------------|--------------|---------------|-----------------|--------------|---------------|---------------|------|
| Alkalinity, bicarb (CaCO <sub>3</sub> ) | 490              | 1720         | 1750          | 1250            | 98           | 101           | 2.3           |      |
| Alkalinity, bicarb (CaCO <sub>3</sub> ) | 268              | 1480         | 1500          | 1250            | 97           | 99            | 1.6           |      |
| Chloride                                | 134              | 242          | 240           | 100             | 108          | 106           | 1.9           |      |
| Chloride                                | 340              | 860          | 860           | 500             | 104          | 104           | 0             |      |
| Fluoride                                | 66.7             | 80.0         | 79.8          | 15.0            | 89           | 87            | 1.6           |      |
| Fluoride                                | 0.4              | 1.27         | 1.29          | 1.0             | 87           | 89            | 2.3           |      |
| Sulfate                                 | 588              | 1807         | 1872          | 1000            | 102          | 108           | 6.2           |      |
| Sulfate                                 | 35.1             | 141          | 131           | 100             | 106          | 96            | 9.8           |      |
| Aluminum, Trace ICP                     | 2.98             | 11.6         | 11.5          | 10.0            | 86           | 85            | 1.2           |      |
| Aluminum, Trace ICP                     | 0.039            | 1.02         | 1.02          | 1.00            | 98           | 98            | 0             |      |
| Aluminum, Trace ICP                     | <0.05            | 0.976        | 0.991         | 1.00            | 98           | 99            | 1.5           |      |
| Arsenic, Trace ICP                      | <0.005           | 0.942        | 0.912         | 1.00            | 94           | 91            | 3.2           |      |
| Arsenic, Trace ICP                      | <0.005           | 0.920        | 0.939         | 1.00            | 92           | 94            | 1.9           |      |
| Barium, Trace ICP                       | 0.016            | 0.926        | 0.895         | 1.00            | 91           | 88            | 3.5           |      |
| Barium, Trace ICP                       | 0.011            | 0.890        | 0.911         | 1.00            | 88           | 90            | 2.4           |      |
| Beryllium, Trace ICP                    | <0.01            | 10.0         | 10.0          | 10.0            | 100          | 100           | 0             | EDL  |
| Beryllium, Trace ICP                    | <0.001           | 0.881        | 0.856         | 1.00            | 88           | 86            | 2.9           |      |
| Beryllium, Trace ICP                    | <0.001           | 0.858        | 0.873         | 1.00            | 86           | 87            | 1.7           |      |
| Boron, Trace ICP                        | 0.552            | 1.18         | 1.44          | 1.00            | 93           | 89            | 4.4           |      |
| Boron, Trace ICP                        | 0.405            | 1.30         | 1.33          | 1.00            | 90           | 93            | 3.3           |      |
| Cadmium, Trace ICP                      | 0.026            | 0.82         | 0.81          | 1.00            | 88           | 88            | 0.1           |      |
| Cadmium, Trace ICP                      | <0.001           | 0.854        | 0.831         | 1.00            | 85           | 83            | 2.7           |      |
| Cadmium, Trace ICP                      | <0.001           | 0.834        | 0.845         | 1.00            | 83           | 85            | 1.3           |      |
| Calcium, Trace ICP                      | 7.47             | 119          | 118           | 100             | 112          | 111           | 0.9           |      |
| Calcium, Trace ICP                      | 298              | 296          | 296           | 10.0            | 80           | 80            | 0             |      |
| Calcium, Trace ICP                      | 356              | 360          | 360           | 10.0            | 40           | 40            | 0             | SSR  |
| Chromium, Trace ICP                     | 0.545            | 10.3         | 10.3          | 10.0            | 98           | 98            | 0             |      |
| Chromium, Trace ICP                     | 0.006            | 0.882        | 0.858         | 1.00            | 88           | 85            | 2.8           |      |
| Chromium, Trace ICP                     | 0.004            | 0.860        | 0.875         | 1.00            | 86           | 87            | 1.7           |      |
| Cobalt, Trace ICP                       | <0.005           | 0.858        | 0.844         | 1.00            | 87           | 84            | 2.8           |      |
| Cobalt, Trace ICP                       | <0.005           | 0.850        | 0.864         | 1.00            | 85           | 86            | 1.6           |      |
| Copper, Trace ICP                       | 0.164            | 10.0         | 10.0          | 10.0            | 98           | 98            | 0             |      |
| Copper, Trace ICP                       | <0.002           | 0.915        | 0.888         | 1.00            | 92           | 89            | 3             |      |
| Copper, Trace ICP                       | 0.005            | 0.889        | 0.909         | 1.00            | 88           | 90            | 2.2           |      |
| Iron, Trace ICP                         | 4.45             | 13.8         | 13.8          | 10.0            | 94           | 94            | 0             |      |
| Iron, Trace ICP                         | 0.038            | 0.905        | 0.880         | 1.00            | 87           | 84            | 2.9           |      |
| Iron, Trace ICP                         | 0.017            | 0.892        | 0.895         | 1.00            | 88           | 88            | 0.3           |      |
| Lead, Trace ICP                         | 1.89             | 11.4         | 11.4          | 10.0            | 95           | 95            | 0             |      |
| Lead, Trace ICP                         | <0.005           | 0.868        | 0.846         | 1.00            | 87           | 85            | 2.6           |      |
| Lead, Trace ICP                         | <0.005           | 0.848        | 0.859         | 1.00            | 85           | 86            | 1.3           |      |
| Magnesium, Trace ICP                    | 1.39             | 98.8         | 98.4          | 100             | 97           | 97            | 0.4           |      |

EDL - Elevated Detection Limit due to matrix interference.

SSR - The sample was >4x level of spike, showed recoveries exist.

Advisory Control Limits for MS/MSDs

Inorganic Parameters - The spike recovery should be 75-125% if the spike amount value is greater than or equal to one fourth of the sample result value. The RPD for the MS/MSD should be less than 20.

NOTE: Matrix Spike Samples may not be samples from this job.



**QUALITY CONTROL REPORT**  
**Matrix Spike / Matrix Spike Duplicate**  
**(MS / MSD)**

JOB NUMBER: 96.00129

| PARAMETER               | SAMPLE<br>RESULT | MS<br>RESULT | MSD<br>RESULT | SPIKE<br>AMOUNT | MS<br>% REC. | MSD<br>% REC. | MS/MSD<br>RPD | FLAG |
|-------------------------|------------------|--------------|---------------|-----------------|--------------|---------------|---------------|------|
| Magnesium, Trace ICP    | 188              | 196          | 196           | 10.0            | 80           | 80            | 0             |      |
| Magnesium, Trace ICP    | 164              | 172          | 171           | 10.0            | 80           | 70            | 13            |      |
| Manganese, Trace ICP    | 0.080            | 0.966        | 0.955         | 1.00            | 91           | 88            | 3.5           |      |
| Manganese, Trace ICP    | 0.013            | 0.890        | 0.916         | 1.00            | 88           | 90            | 2.9           |      |
| Mercury, CVAA           | <0.0002          | 0.43         | 0.41          | 0.50            | 85           | 82            | 4.8           |      |
| Mercury, CVAA           | 0.0002           | 0.0073       | 0.0072        | 0.0060          | 142          | 140           | 1.4           | MI   |
| Mercury, CVAA           | <0.0002          | 0.45         | 0.55          | 0.50            | 130          | 120           | 0             | MI   |
| Mercury, CVAA           | <0.0002          | 0.42         | 0.46          | 0.50            | 84           | 92            | 9.1           |      |
| Molybdenum, Trace ICP   | 0.014            | 0.915        | 0.884         | 1.00            | 90           | 87            | 3.6           |      |
| Molybdenum, Trace ICP   | <0.005           | 0.884        | 0.901         | 1.00            | 88           | 90            | 1.9           |      |
| Nickel, Trace ICP       | 0.006            | 0.853        | 0.827         | 1.00            | 85           | 82            | 3.1           |      |
| Nickel, Trace ICP       | <0.002           | 0.833        | 0.846         | 1.00            | 83           | 85            | 1.5           |      |
| Potassium, Trace ICP    | 1.39             | 99.3         | 98.3          | 100             | 98           | 97            | 1             |      |
| Potassium, Trace ICP    | 1.14             | 11.6         | 11.2          | 10.0            | 105          | 101           | 3.9           |      |
| Potassium, Trace ICP    | 0.763            | 11.1         | 11.3          | 10.0            | 103          | 105           | 1.9           |      |
| Selenium, Trace ICP     | <0.005           | 0.910        | 0.883         | 1.00            | 91           | 88            | 3             |      |
| Selenium, Trace ICP     | 0.007            | 0.892        | 0.908         | 1.00            | 89           | 90            | 1.8           |      |
| Silver, Trace ICP       | 0.235            | 9.77         | 9.85          | 10.0            | 95           | 96            | 0.9           |      |
| Silver, Trace ICP       | <0.002           | 0.925        | 0.908         | 1.00            | 93           | 91            | 2             |      |
| Silver, Trace ICP       | <0.002           | 0.905        | 0.938         | 1.00            | 91           | 94            | 3.6           |      |
| Sodium, Trace ICP       | 125              | 216          | 214           | 100             | 91           | 89            | 2.2           |      |
| Sodium, Trace ICP       | 64.0             | 74.4         | 74.1          | 10.0            | 104          | 101           | 2.9           |      |
| Sodium, Trace ICP       | 136              | 145          | 145           | 10.0            | 90           | 90            | 0             |      |
| Vanadium, Trace ICP     | 0.016            | 0.929        | 0.890         | 1.00            | 91           | 87            | 4.4           |      |
| Vanadium, Trace ICP     | <0.01            | 0.890        | 0.918         | 1.00            | 89           | 92            | 3.1           |      |
| Zinc, Trace ICP         | 0.206            | 10.0         | 10.0          | 10.0            | 98           | 98            | 0             |      |
| Zinc, Trace ICP         | <0.01            | 0.897        | 0.870         | 1.00            | 90           | 87            | 3.1           |      |
| Zinc, Trace ICP         | <0.01            | 0.884        | 0.894         | 1.00            | 88           | 89            | 1.1           |      |
| EPA-8020 AQ (PRESERVED) |                  |              |               |                 |              |               |               |      |
| Benzene                 | <2               | 19           | 19            | 20              | 95           | 95            | 0             |      |
| Ethylbenzene            | <2               | 23           | 21            | 20              | 115          | 105           | 9.1           |      |
| Toluene                 | <2               | 20           | 20            | 20              | 100          | 100           | 0             |      |
| Xylenes, Total          | <2               | 77           | 71            | 60              | 128          | 118           | 8.1           |      |
| MTBE                    | <2               | 38           | 36            | 40              | 95           | 90            | 5.4           |      |

MI - MS/MSD outside limits - matrix interference suspected

Advisory Control Limits for MS/MSDs

Inorganic Parameters - The spike recovery should be 75-125% if the spike amount value is greater than or equal to one fourth of the sample result value. The RPD for the MS/MSD should be less than 20.

NOTE: Matrix Spike Samples may not be samples from this job.



QUALITY CONTROL REPORT  
DUPLICATES

JOB NUMBER: 96.00129

| PARAMETER | SAMPLE | DUPLICATE | RPD | SPIKE<br>SAMPLE | SPIKE  | SPIKE  | % REC. | FLAG |
|-----------|--------|-----------|-----|-----------------|--------|--------|--------|------|
|           | RESULT | RESULT    |     | RESULT          | RESULT | AMOUNT |        |      |
| Fluoride  | 2.49   | 2.50      | 0.4 | NA              | NA     | NA     | NA     |      |
| Fluoride  | 3.45   | 3.48      | 0.9 | NA              | NA     | NA     | NA     |      |

Advisory Control Limits for Spikes

The spike recovery should be 75-125% if the spike amount is greater than or equal to one fourth of the sample result value.

NOTE: Spike Samples may not be samples from this job.

Advisory Control Limits for Duplicates

The RPD for the sample and duplicate should be less than 20.



NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

## CHAIN OF CUSTODY RECORD

COMPANY Navajo Refining Co.  
ADDRESS 501 E. Main  
PHONE 505-748-3311 FAX 505-748-9077  
PROJECT NAME/LOCATION Orly Remediation - Navajo  
PROJECT NUMBER \_\_\_\_\_  
PROJECT MANAGER Darrell Moore

REPORT TO: D. Moore

INVOICE TO: D. Moore

P.O. NO. \_\_\_\_\_

NET QUOTE NO. \_\_\_\_\_

SAMPLED BY  
Darrell Moore  
(PRINT NAME)

SIGNATURE  
Darrell Moore

(PRINT NAME)

SIGNATURE

| DATE   | TIME | SAMPLE ID/DESCRIPTION            | a and Type of Containers |      |      |     |      |
|--------|------|----------------------------------|--------------------------|------|------|-----|------|
|        |      |                                  | MATRIX                   | GRAB | COMP | ICI | NaOH |
| 4/4/96 | 1000 | MW-18 ✓                          |                          |      |      | 2   |      |
| " "    | 1100 | KWB-9 ✓                          |                          |      |      | "   |      |
| " "    | 1300 | KWB-2A ✓                         |                          |      |      | "   |      |
| " "    | 1600 | KWB-11A ✓                        |                          |      |      | "   |      |
| " "    | 1645 | KWB-7 ✓                          |                          |      |      | "   |      |
| 4/5/96 | 900  | KWB-3A ✓                         |                          |      |      | "   |      |
| " "    | 1115 | KWB-1C ✓                         |                          |      |      | "   |      |
| " "    | 1330 | KWB-1A ✓                         |                          |      |      | "   |      |
| " "    | 1410 | MW-45 ✓                          |                          |      |      | "   |      |
| 4/6/96 | 945  | Navajo Effluent to Ponds (Amend) |                          |      |      | "   |      |
| " "    | 1030 | RA-2723 ✓                        |                          |      |      | "   |      |
| " "    | 1045 | RA-4196 ✓                        |                          |      |      | "   |      |
| " "    | 1100 | RA-4798 ✓                        |                          |      |      | "   |      |
| " "    | 1115 | RA-3156 ✓                        |                          |      |      | "   |      |
| " "    | 1130 | RA-3353 ✓                        |                          |      |      | "   |      |

CONDITION OF SAMPLE: BOTTLES INTACT? ☒ YES / NO  
FIELD FILTERED? ☒ YES / NO

COC SEALS PRESENT AND INTACT? YES / NO  
VOLATILES FREE OF HEADSPACE? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA \_\_\_\_\_  
REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS

RELINQUISHED BY: D. Moore DATE 1/9/96 TIME 16:30

METHOD OF SHIPMENT  
Fed-X

RELINQUISHED BY:

RECEIVED BY:

DATE 1-9-96 TIME 11:45a

REMARKS: \*Metals are Al, As, Ba, Be, Bi, Cd, Cr, Cu, Fe, Mn, Pb, Hg, Ni, Se, Ag, Zn, U, Mo.  
Al, Pb, Se, Ag are to be run by AA. Samples collected on 1/4 and 1/5 were kept on ice.

### ANALYSES

BITEX + MTRE

PAHs

Metals \*

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ☒ No \_\_\_\_\_

Is this work being conducted for regulatory enforcement action? Yes \_\_\_\_\_ No \_\_\_\_\_

Which regulations apply: RCRA \_\_\_\_\_ NPDES Wastewater \_\_\_\_\_  
LIST \_\_\_\_\_ Drinking Water ☒  
Other \_\_\_\_\_ None \_\_\_\_\_

### COMMENTS

trid - 1/11/96  
+ blank id

Per Greg - per original - throw sample away! - do not analyze.

TEMPERATURE UPON RECEIPT: 4°C  
Bottles supplied by NET? YES / NO water

DATE

RECEIVED FOR NET/AV

TIME

DATE

RELINQUISHED BY:

RECEIVED BY:

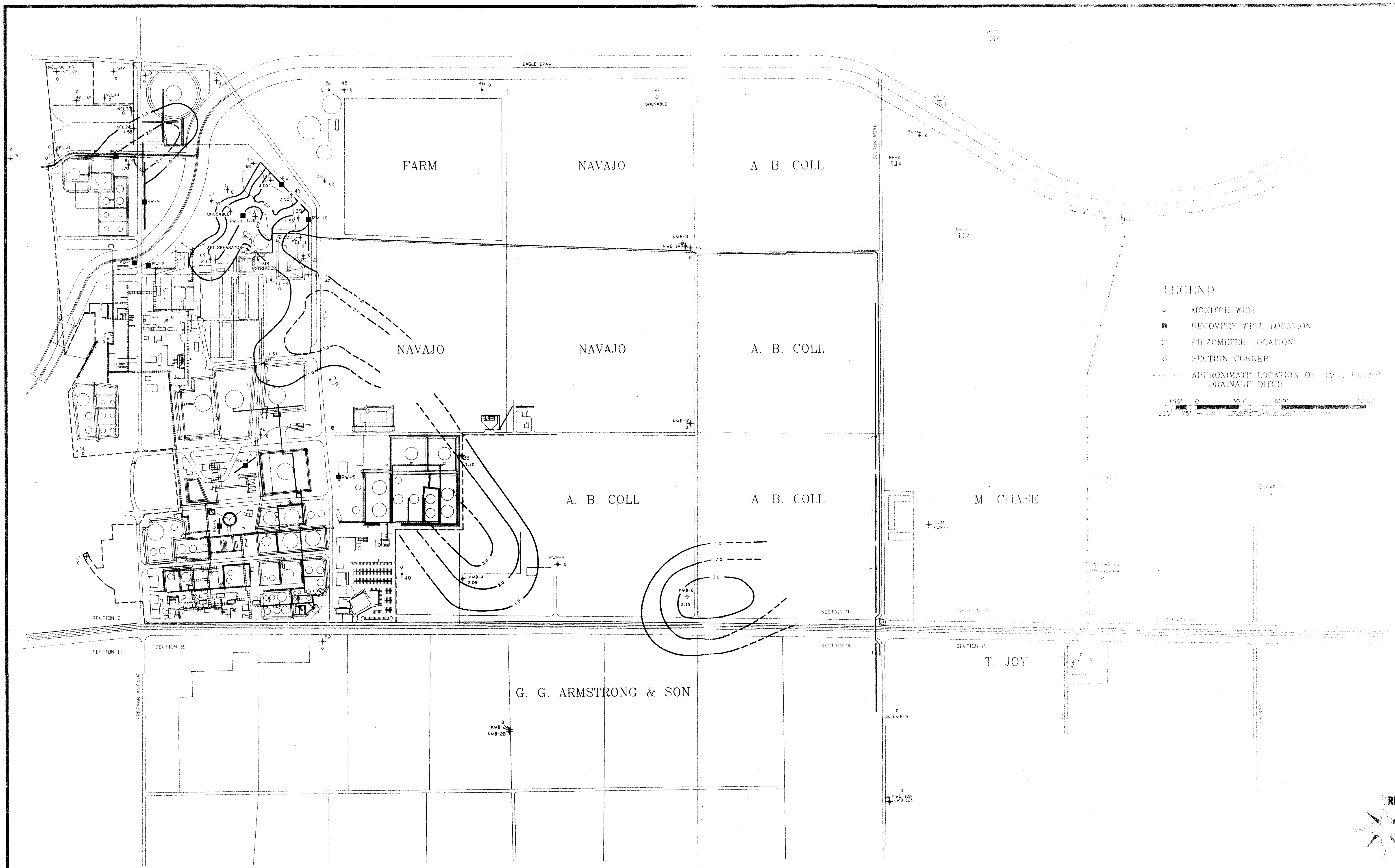
DATE 1-9-96 TIME 11:45a

REMARKS: \*Metals are Al, As, Ba, Be, Bi, Cd, Cr, Cu, Fe, Mn, Pb, Hg, Ni, Se, Ag, Zn, U, Mo.  
Al, Pb, Se, Ag are to be run by AA. Samples collected on 1/4 and 1/5 were kept on ice.









**LEGEND**

- MONITOR WELL
- RECOVERY WELL LOCATION
- PIEZOMETER LOCATION
- SECTION CORNER
- APPROXIMATE LOCATION OF PAVE FURROW DRAINAGE DITCH

150' 0 300' 600' 1200'

225' 75'

**ISSUED FOR**  
JAN 17 1996  
**REFERENCE O**



|       |                    |     |           |    |     |      |      |      |     |           |    |     |      |      |      |  |  |  |
|-------|--------------------|-----|-----------|----|-----|------|------|------|-----|-----------|----|-----|------|------|------|--|--|--|
| NOTES | REFERENCE DRAWINGS | NO. | REVISIONS | BY | CHK | DATE | APPR | APPR | NO. | REVISIONS | BY | CHK | DATE | APPR | APPR |  |  |  |
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