GW - 14

REPORTS

YEAR(S):

2006 - 1989

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, March 20, 2006 3:20 PM
To: 'Moore, Darrell'
Cc: Price, Wayne, EMNRD
Subject: RE: Pit & RO Lab ID: 0404204-01

Darrell:

Good afternoon. I notice that you exceeded holding times on your sample for BOD and residual chlorine and I don't see lab results for those parameters in the RO analytical lab results (Lab ID 0404204-01). In the lab report, several of the metals, anions, and volatile recoveries were outside of the control limits of the lab and I must question the analytical data results based on this. Also, the reporting limit on the organics; i.e., benzene RQ and BTE in general was 5 ppb seem elevated. Xylenes were 15 ppb RQ.

Did you take a look at the analytical data results? If so, are there exceedences to any of the WQCC water quality standards? If so, which parameters exceed and by how much? I think you need to provide OCD with your preliminary assessment of your raw data and indicate the basis for your request for pit construction and use for farm irrigation water supply. I could not find a statement of your intention that accompanied the water quality raw data results.

The OCD generally regards RO reject water as elevated in chlorides and other constituents and OCD requires storage in pits to be constructed in accordance with OCD standard pit construction with leak detection requirements. I believe your request is to construct a pit at the Navajo-Lovington Refinery to store irrigation water for a nearby farmer to use the water off-site for irrigation purposes. Is this correct? If so, this may require a modification to Navajo's discharge permit. We need to know if the water is going off-site and exactly where the water is going? It would seem the farmer would need to pipe the water off refinery property onto the farmland to be irrigated and depending on the farmland property location and the discharge, there could be some discharge issues to discuss.

Regarding pit construction and leak detection, we can talk with Wayne of Wednesday. We'll give you a call. I recommend that you look into the above comments and questions for Wednesday.

Thank you.

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

From: Moore, Darrell [mailto:Darrell.Moore@navajo-refining.com]
Sent: Tuesday, March 14, 2006 9:26 AM
To: Chavez, Carl J, EMNRD
Subject: RE: Pit

I had sent Wayne some analysis of our RO Reject water from Lovington to see what OCD would require from us if we built a pit to store some of that water. I never got any response so I was just checking to see if you were getting the e mails.

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, March 14, 2006 9:12 AM
To: Moore, Darrell; Price, Wayne, EMNRD
Subject: RE: Pit

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, March 20, 2006 3:21 PM
To: Price, Wayne, EMNRD
Subject: FW: Pit & RO Lab ID: 0404204-01

Wayne:

See attached the water quality comparisons for Wednesday's call to Darrell. Thnx.

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

From: Chavez, Carl J, EMNRD
Sent: Monday, March 20, 2006 3:20 PM
To: 'Moore, Darrell'
Cc: Price, Wayne, EMNRD
Subject: RE: Pit & RO Lab ID: 0404204-01

Darrell:

Good afternoon. I notice that you exceeded holding times on your sample for BOD and residual chlorine and I don't see lab results for those parameters in the RO analytical lab results (Lab ID 0404204-01). In the lab report, several of the metals, anions, and volatile recoveries were outside of the control limits of the lab and I must question the analytical data results based on this. Also, the reporting limit on the organics; i.e., benzene RQ and BTE in general was 5 ppb seem elevated. Xylenes were 15 ppb RQ.

Did you take a look at the analytical data results? If so, are there exceedences to any of the WQCC water quality standards? If so, which parameters exceed and by how much? I think you need to provide OCD with your preliminary assessment of your raw data and indicate the basis for your request for pit construction and use for farm irrigation water supply. I could not find a statement of your intention that accompanied the water quality raw data results.

The OCD generally regards RO reject water as elevated in chlorides and other constituents and OCD requires storage in pits to be constructed in accordance with OCD standard pit construction with leak detection requirements. I believe your request is to construct a pit at the Navajo-Lovington Refinery to store irrigation water for a nearby farmer to use the water off-site for irrigation purposes. Is this correct? If so, this may require a modification to Navajo's discharge permit. We need to know if the water is going off-site and exactly where the water is going? It would seem the farmer would need to pipe the water off refinery property onto the farmland to be irrigated and depending on the farmland property location and the discharge, there could be some discharge issues to discuss.

Regarding pit construction and leak detection, we can talk with Wayne of Wednesday. We'll give you a call. I recommend that you look into the above comments and questions for Wednesday.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505

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

From: Moore, Darrell [mailto:Darrell.Moore@navajo-refining.com]
Sent: Tuesday, March 14, 2006 9:26 AM
To: Chavez, Carl J, EMNRD
Subject: RE: Pit

I had sent Wayne some analysis of our RO Reject water from Lovington to see what OCD would require from us if we built a pit to store some of that water. I never got any response so I was just checking to see if you were getting the e mails.

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, March 14, 2006 9:12 AM
To: Moore, Darrell; Price, Wayne, EMNRD
Subject: RE: Pit

Darrell:

Good morning. I am in receipt of your e-mail msg. below. Thanks.

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

From: Moore, Darrell [mailto:Darrell.Moore@navajo-refining.com]
Sent: Tuesday, March 14, 2006 9:02 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Subject: Pit

Are you receiving these e mails?

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

Navajo Lovington Refinery RO Water Sample Results

Date: 4/16/2004

Lab ID	0404204-01	WQCC	SDWA	SMCL
Metals				
Arsenic:	12.5 ppb	100 ppb	10 ppb	
Barium:	293 ppb	2000 ppb	2000 ppb	
Boron:	342 ppb	750 ppb		
Cadmium	1 ppb	10 ppb	5 ppb	
Chromium (total):	12.9 ppb	100 ppb	100 ppb	
Lead	5 ppb	50 ppb	15 ppb	
Molybdenum:	6.6 ppb	1000 ppb		
Nickel:	5 ppb	100 ppb		
Potassium:	6,780 ppb			
Selenium:	13 ppb	5 ppb	50 ppb	
Vanadium:	67 ppb	100 ppb		
VOCs:	ND			
SVOCs	ND			
BOD:	?			
COD:	60 mg/L			
Phenolics:	50 ppb	21 mg/L		
Chloride:	1,050 mg/L			250 mg/L
Fluoride:	2.4 mg/L	4 mg/L		2 mg/L
Nitrogen:	8 mg/L	10 mg/L		
Sulfate:	251 mg/L			
Residual chlorine	?	11 ppb		
Alkalinity:	110 mg/L			
Specific Cond.:	3,790 umhos/cm			
pH:	6.11			6.5 - 8.5
TDS:	2,990 mg/L			500 mg/L
TSS:	4 mg/L			

e-Lab, Inc.

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 281-530-5656 Fax 281-530-5887

May 11, 2004

Charlie Plymale
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211

Tel: (505) 746-5241
Fax: (505) 746-5421

Re: RO Annual-Lovington Work Order : **0404204**

Dear Charlie Plymale,

e-Lab, Inc. received 3 samples on 4/17/2004 8:45:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Inc. The total number of pages in this report is 49.

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

Sincerely,

Jeffrey L Croston

Electronically approved by: Patrina A. Dathorne

Jeffrey L Croston

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Project: RO Annual-Lovington
Work Order: **0404204**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0404204-01	R.O. Reject Water	Water		4/16/2004 08:00	4/17/2004 08:45	☐
0404204-02	Trip Blank 0836	Water		4/16/2004	4/17/2004 08:45	☐
0404204-03	Trip Blank 0944	Water		4/16/2004	4/17/2004 08:45	☐

e-Lab, Inc. **Date:** *May 11, 2004*

CLIENT: Navajo Refining Company
Project: RO Annual-Lovington
Work Order: 0404204

Case Narrative

Batch 8754 Metals MS/MSD recoveries were outside of control limits on an unrelated sample.

Batch R20018 Volatiles MS/MSD/RPD recoveries were outside of control limits on an unrelated sample.

Batch R19973 Anions (sample R.O. Reject) MS/MSD recoveries were outside of control limits for Chloride and Sulfate. These recoveries should not be evaulated because the background concentrations are >4 times the spike amount and values exceeds the working linear calibration range.

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081**			Prep Date: **4/20/2004**	Analyst: **JLJ**
4,4'-DDD	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
4,4'-DDE	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
4,4'-DDT	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Aldrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
alpha-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
beta-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Chlordane	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
delta-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Dieldrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan I	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan II	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan sulfate	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin aldehyde	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin ketone	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
gamma-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Heptachlor	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Heptachlor epoxide	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Methoxychlor	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
Toxaphene	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
Surr: Decachlorobiphenyl	83.5	57.3-148		%REC	1	4/21/2004 12:46:00 AM
Surr: Tetrachloro-m-xylene	88.8	49.2-132		%REC	1	4/21/2004 12:46:00 AM
PCBS		**SW8082**			Prep Date: **4/20/2004**	Analyst: **JLJ**
Aroclor 1016	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1221	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1232	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1242	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1248	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1254	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1260	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Surr: Decachlorobiphenyl	105	54.7-129		%REC	1	4/21/2004 2:57:00 AM
Surr: Tetrachloro-m-xylene	106	48-142		%REC	1	4/21/2004 2:57:00 AM
MERCURY, TOTAL		**SW7470**			Prep Date: **4/27/2004**	Analyst: **JCJ**
Mercury	ND	0.000200		mg/L	1	4/27/2004 4:45:56 PM
ICP METALS, TOTAL		**SW6020**			Prep Date: **4/23/2004**	Analyst: **ALR**
Aluminum	ND	0.0100		mg/L	1	4/26/2004 5:13:00 PM
Arsenic	0.0125	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Barium	0.293	0.00500		mg/L	1	4/26/2004 5:13:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
Beryllium	ND	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Boron	0.342	0.0200		mg/L	1	4/26/2004 5:13:00 PM
Cadmium	ND	0.00100		mg/L	1	4/26/2004 5:13:00 PM
Calcium	369	10.0		mg/L	20	4/27/2004 4:47:00 PM
Chromium	0.0129	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Cobalt	ND	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Copper	0.00303	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Iron	0.677	0.200		mg/L	1	4/26/2004 5:13:00 PM
Lead	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Magnesium	44.2	0.200		mg/L	1	4/26/2004 5:13:00 PM
Manganese	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Molybdenum	0.00661	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Nickel	0.00525	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Potassium	6.78	0.200		mg/L	1	4/26/2004 5:13:00 PM
Selenium	0.0132	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Silver	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Sodium	ND	0.200		mg/L	1	4/26/2004 5:13:00 PM
Vanadium	0.0668	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Zinc	0.00504	0.00500		mg/L	1	4/26/2004 5:13:00 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270**			Prep Date: **4/19/2004**	Analyst: **JLJ**
1,2,4-Trichlorobenzene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2,4,5-Trichlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2,4,6-Trichlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Methylnaphthalene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Methylphenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Nitrophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
3-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Methylphenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Nitrophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Acenaphthene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Acenaphthylene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Aniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Anthracene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Benz(a)anthracene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Benzidine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Hexachloroethane	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Isophorone	ND	11		µg/L	1	4/28/2004 12:23:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
N-Nitrosodimethylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
N-Nitrosodiphenylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Naphthalene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Nitrobenzene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Pentachlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Phenanthrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Phenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Pyrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Surr: 2,4,6-Tribromophenol	86.5	39-153		%REC	1	4/28/2004 12:23:00 AM
Surr: 2-Fluorobiphenyl	84.2	40-147		%REC	1	4/28/2004 12:23:00 AM
Surr: 2-Fluorophenol	30.9	21-110		%REC	1	4/28/2004 12:23:00 AM
Surr: 4-Terphenyl-d14	83.5	39-141		%REC	1	4/28/2004 12:23:00 AM
Surr: Nitrobenzene-d5	75.8	37-140		%REC	1	4/28/2004 12:23:00 AM
Surr: Phenol-d6	20.2	11-100		%REC	1	4/28/2004 12:23:00 AM
VOLATILES BY GC/MS		**SW8260**				Analyst: **PC**
1,1,1-Trichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
2-Butanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
2-Chloroethyl vinyl ether	ND	10		µg/L	1	4/26/2004 6:51:00 PM
2-Hexanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Acetone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Benzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromoform	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromomethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Carbon disulfide	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chlorobenzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloroform	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Ethylbenzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
m,p-Xylene	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Methylene chloride	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Styrene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Toluene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Trichloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Vinyl acetate	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Vinyl chloride	ND	2.0		µg/L	1	4/26/2004 6:51:00 PM
Xylenes, Total	ND	15		µg/L	1	4/26/2004 6:51:00 PM
Surr: 1,2-Dichloroethane-d4	87.7	71-126		%REC	1	4/26/2004 6:51:00 PM
Surr: 4-Bromofluorobenzene	87.1	74-125		%REC	1	4/26/2004 6:51:00 PM
Surr: Dibromofluoromethane	89.0	73-126		%REC	1	4/26/2004 6:51:00 PM
Surr: Toluene-d8	102	75-125		%REC	1	4/26/2004 6:51:00 PM
CHEMICAL OXYGEN DEMAND		**E410.4**				Analyst: **MAG**
Chemical Oxygen Demand	59.6	5.00		mg/L	1	4/23/2004
PHENOLICS		**E420.2**				Analyst: **MAG**
Phenolics, Total Recoverable	ND	0.0500		mg/L	1	4/28/2004
ANIONS BY ION CHROMATOGRAPHY		**E300**				Analyst: **MG**
Chloride	1,050	25.0		mg/L	50	4/17/2004 8:28:00 PM
Fluoride	2.44	0.100		mg/L	1	4/17/2004 5:36:00 PM
Nitrogen, Nitrate (As N)	7.99	0.100		mg/L	1	4/17/2004 5:36:00 PM
Sulfate	251	10.0		mg/L	10	4/17/2004 7:59:00 PM
Surr: Dichloroacetic acid (surr)	99.4	80-120		%REC	50	4/17/2004 8:28:00 PM
Surr: Dichloroacetic acid (surr)	99.6	80-120		%REC	10	4/17/2004 7:59:00 PM
Surr: Dichloroacetic acid (surr)	100	80-120		%REC	1	4/17/2004 5:36:00 PM
ALKALINITY		**E310.1**				Analyst: **LMD**
Alkalinity, Bicarbonate (As CaCO3)	110	5.00		mg/L	1	4/28/2004
Alkalinity, Carbonate (As CaCO3)	ND	5.00		mg/L	1	4/28/2004
Alkalinity, Hydroxide (As CaCO3)	ND	5.00		mg/L	1	4/28/2004
Alkalinity, Total (As CaCO3)	110	5.00		mg/L	1	4/28/2004
CYANIDE, TOTAL		**E335.3**				Analyst: **LMD**
Cyanide	ND	0.0200		mg/L	1	4/24/2004
CONDUCTIVITY		**E120.1**				Analyst: **LMD**
Specific Conductance	3,790	1.00		µmhos/cm	1	4/20/2004
AMMONIA AS N		**E350.1**				Analyst: **MAG**
Nitrogen, Ammonia (As N)	ND	0.0625		mg/L	1.25	4/26/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc. **Date:** *May 11, 2004*

CLIENT:	Navajo Refining Company	**Client Sample ID:**	R.O. Reject Water
Work Order:	0404204	**Collection Date:**	4/16/2004 8:00:00 AM
Project:	RO Annual-Lovington		
Lab ID:	0404204-01	**Matrix:**	WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
PH		**E150.1**				Analyst: **LMD**
pH	6.11	0.100		pH units	1	4/17/2004
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **QLD**
Total Dissolved Solids (Residue, Filterable)	2,990	10.0		mg/L	1	4/20/2004
TOTAL SUSPENDED SOLIDS		**E160.2**				Analyst: **QLD**
Suspended Solids (Residue, Non-Filterable)	4.00	2.00		mg/L	1	4/20/2004

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- P - Dual Column results percent difference > 40%
- E - Value above quantitation range
- H - Analyzed outside of Hold Time

e-Lab, Inc.

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

Date: *May 11 2004*

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

MBLK Sample ID: **PBLKW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 16:26**

Client ID: Run ID: **ECD_1_040418B** SeqNo: **459148** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	ND	0.050								
4,4'-DDE	ND	0.050								
4,4'-DDT	ND	0.050								
Aldrin	ND	0.050								
alpha-BHC	ND	0.050								
beta-BHC	ND	0.050								
Chlordane	ND	0.50								
delta-BHC	ND	0.050								
Dieldrin	ND	0.050								
Endosulfan I	ND	0.050								
Endosulfan II	ND	0.050								
Endosulfan sulfate	ND	0.050								
Endrin	ND	0.050								
Endrin aldehyde	ND	0.050								
Endrin ketone	ND	0.050								
gamma-BHC	ND	0.050								
Heptachlor	ND	0.050								
Heptachlor epoxide	ND	0.050								
Methoxychlor	ND	0.50								
Toxaphene	ND	0.50								
Surr: Decachlorobiphenyl	0.1877	0.050	0.2	0	93.9	57.3-148	0			
Surr: Tetrachloro-m-xylene	0.2172	0.050	0.2	0	109	49.2-132	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

LCS Sample ID: **PLCSW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 17:01**

Client ID: Run ID: **ECD_1_040418B** SeqNo: **459149** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4657	0.050	0.5	0	93.1	52.8-136	0			
4,4'-DDE	0.4606	0.050	0.5	0	92.1	65-138	0			
4,4'-DDT	0.4561	0.050	0.5	0	91.2	56.2-140	0			
Aldrin	0.2127	0.050	0.25	0	85.1	51.6-126	0			
alpha-BHC	0.23	0.050	0.25	0	92	53.9-126	0			
beta-BHC	0.2317	0.050	0.25	0	92.7	63.4-140	0			
delta-BHC	0.2301	0.050	0.25	0	92	44.2-137	0			
Dieldrin	0.4679	0.050	0.5	0	93.6	61.1-137	0			
Endosulfan I	0.2327	0.050	0.25	0	93.1	47-129	0			
Endosulfan II	0.4564	0.050	0.5	0	91.3	65-136	0			
Endosulfan sulfate	0.455	0.050	0.5	0	91	59.9-136	0			
Endrin	0.5284	0.050	0.5	0	106	66.5-154	0			
Endrin aldehyde	0.4654	0.050	0.5	0	93.1	67-142	0			
Endrin ketone	0.4746	0.050	0.5	0	94.9	67.2-147	0			
gamma-BHC	0.2347	0.050	0.25	0	93.9	58-132	0			
Heptachlor	0.2291	0.050	0.25	0	91.7	46.3-130	0			
Heptachlor epoxide	0.2293	0.050	0.25	0	91.7	63.5-132	0			
Methoxychlor	2.476	0.50	2.5	0	99	64.2-137	0			
Surr: Decachlorobiphenyl	0.1337	0.050	0.2	0	66.8	57.3-148	0			
Surr: Tetrachloro-m-xylene	0.1942	0.050	0.2	0	97.1	49.2-132	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

LCSD Sample ID: **PLCSDW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 17:36**
Client ID: Run ID: **ECD_1_040418B** SeqNo: **459150** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4644	0.050	0.5	0	92.9	52.8-136	0.4657	0.282	30	
4,4'-DDE	0.4631	0.050	0.5	0	92.6	65-138	0.4606	0.53	30	
4,4'-DDT	0.4546	0.050	0.5	0	90.9	56.2-140	0.4561	0.323	30	
Aldrin	0.2139	0.050	0.25	0	85.6	51.6-126	0.2127	0.563	30	
alpha-BHC	0.2357	0.050	0.25	0	94.3	53.9-126	0.23	2.45	30	
beta-BHC	0.236	0.050	0.25	0	94.4	63.4-140	0.2317	1.83	30	
delta-BHC	0.2465	0.050	0.25	0	98.6	44.2-137	0.2301	6.9	30	
Dieldrin	0.4705	0.050	0.5	0	94.1	61.1-137	0.4679	0.552	30	
Endosulfan I	0.2322	0.050	0.25	0	92.9	47-129	0.2327	0.207	30	
Endosulfan II	0.4564	0.050	0.5	0	91.3	65-136	0.4564	0.00876	30	
Endosulfan sulfate	0.4589	0.050	0.5	0	91.8	59.9-136	0.455	0.853	30	
Endrin	0.5271	0.050	0.5	0	105	66.5-154	0.5284	0.246	30	
Endrin aldehyde	0.4576	0.050	0.5	0	91.5	67-142	0.4654	1.7	30	
Endrin ketone	0.4805	0.050	0.5	0	96.1	67.2-147	0.4746	1.22	30	
gamma-BHC	0.2389	0.050	0.25	0	95.6	58-132	0.2347	1.8	30	
Heptachlor	0.2419	0.050	0.25	0	96.8	46.3-130	0.2291	5.42	30	
Heptachlor epoxide	0.2278	0.050	0.25	0	91.1	63.5-132	0.2293	0.669	30	
Methoxychlor	2.434	0.50	2.5	0	97.3	64.2-137	2.476	1.73	30	
Surr: Decachlorobiphenyl	0.1661	0.050	0.2	0	83	57.3-148	0.1337	21.6	30	
Surr: Tetrachloro-m-xylene	0.1912	0.050	0.2	0	95.6	49.2-132	0.1942	1.54	30	

The following samples were analyzed in this batch: 0404204-01F

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8712** InstrumentID: **ECD_3**

MBLK Sample ID: **PBLKW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 0:38**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460650** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	0.1987	0.050	0.2	0	99.3	54.7-129	0			
Surr: Tetrachloro-m-xylene	0.222	0.050	0.2	0	111	48-142	0			

LCS Sample ID: **PLCSW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 1:13**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460651** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3.69	0.50	5	0	73.8	58-135	0			
Aroclor 1260	3.699	0.50	5	0	74	56.8-125	0			
Surr: Decachlorobiphenyl	0.1618	0.050	0.2	0	80.9	54.7-129	0			
Surr: Tetrachloro-m-xylene	0.1851	0.050	0.2	0	92.5	48-142	0			

LCSD Sample ID: **PLCSDW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 1:48**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460652** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.035	0.50	5	0	80.7	58-135	3.69	8.94	20	
Aroclor 1260	4.074	0.50	5	0	81.5	56.8-125	3.699	9.64	20	
Surr: Decachlorobiphenyl	0.1812	0.050	0.2	0	90.6	54.7-129	0.1618	11.3	20	
Surr: Tetrachloro-m-xylene	0.216	0.050	0.2	0	108	48-142	0.1851	15.4	20	

The following samples were analyzed in this batch: 0404204-01G

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8753** InstrumentID: **Mercury**

MBLK Sample ID: **GBLKW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:11**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462206** Prep Date: **4/27/2004** DF: **1**

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

LCS Sample ID: **GLCSW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:12**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462207** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.00020	0.005	0	101	83-115	0			

LCSD Sample ID: **GLCSDW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:22**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462208** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00505	0.00020	0.005	0	101	83-115	0.00506	0.198	20	

MS Sample ID: **0404224-01BMS** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:36**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462211** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00457	0.00020	0.005	0.000015	91.1	83-115	0			

MSD Sample ID: **0404224-01BMSD** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:38**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462212** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00454	0.00020	0.005	0.000015	90.5	83-115	0.00457	0.659	20	

DUP Sample ID: **0404224-01BDUP** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:27**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462210** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	0.000015	0	20	

The following samples were analyzed in this batch: 0404204-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MBLK Sample ID: **MBLKW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 16:15**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461029** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	0.0006788	0.0050								J
Beryllium	ND	0.0020								
Boron	ND	0.020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Sodium	ND	0.20								
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

MBLK Sample ID: **MBLKW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:12**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461547** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cadmium	ND	0.0020								
Selenium	ND	0.0050								
Silver	ND	0.0050								

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

LCS Sample ID: **MLCSW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 16:21**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461030** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.04512	0.010	0.05	0	90.2	79-126	0			
Arsenic	0.04627	0.0050	0.05	0	92.5	80-121	0			
Barium	0.05047	0.0050	0.05	0	101	79.8-119	0			
Beryllium	0.04891	0.0020	0.05	0	97.8	78.9-120	0			
Boron	0.4804	0.020	0.5	0	96.1	80-120	0			
Calcium	5.244	0.50	5	0	105	80-121	0			
Chromium	0.04796	0.0050	0.05	0	95.9	79.3-121	0			
Cobalt	0.05133	0.0050	0.05	0	103	82-121	0			
Copper	0.04555	0.0050	0.05	0	91.1	83-121	0			
Iron	5.367	0.20	5	0	107	80-120	0			
Lead	0.04509	0.0050	0.05	0	90.2	80-118	0			
Magnesium	5.316	0.20	5	0	106	80-120	0			
Manganese	0.04485	0.0050	0.05	0	89.7	82-119	0			
Molybdenum	0.04512	0.0050	0.05	0	90.2	84.6-115	0			
Nickel	0.04943	0.0050	0.05	0	98.9	85-120	0			
Potassium	5.298	0.20	5	0	106	80-120	0			
Sodium	5.259	0.20	5	0	105	82.4-120	0			
Vanadium	0.04288	0.0050	0.05	0	85.8	82.1-119	0			
Zinc	0.04656	0.0050	0.05	0	93.1	83-118	0			

LCS Sample ID: **MLCSW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:17**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461548** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cadmium	0.04869	0.0020	0.05	0	97.4	79.1-119	0			
Selenium	0.0469	0.0050	0.05	0	93.8	79.2-118	0			
Silver	0.04721	0.0050	0.05	0	94.4	83-117	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MS Sample ID: **0404224-01BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:44**

Client ID: Run ID: **ICP7500_040423A** SeqNo: **461045** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04389	0.0050	0.05	0	87.8	80-121	0			
Beryllium	0.042	0.0020	0.05	0	84	78.9-120	0			
Boron	0.7191	0.020	0.5	0.2598	91.9	80-120	0			
Calcium	93.06	0.50	5	93.33	-5.4	80-121	0			SEO
Chromium	0.04948	0.0050	0.05	0.006417	86.1	79.3-121	0			
Cobalt	0.04981	0.0050	0.05	0.00133	97	82-121	0			
Copper	0.0431	0.0050	0.05	0.002979	80.2	83-121	0			S
Iron	4.66	0.20	5	0.1243	90.7	80-120	0			
Lead	0.04051	0.0050	0.05	0	81	80-118	0			
Magnesium	51.14	0.20	5	49.37	35.4	80-120	0			SEO
Molybdenum	0.04417	0.0050	0.05	0	88.3	84.6-115	0			
Nickel	0.04601	0.0050	0.05	0.004771	82.5	85-120	0			S
Potassium	7.558	0.20	5	3.122	88.7	80-120	0			
Selenium	0.04085	0.0050	0.05	0	81.7	79.2-118	0			
Silver	0.04288	0.0050	0.05	0	85.8	83-117	0			
Vanadium	0.04877	0.0050	0.05	0.00121	95.1	82.1-119	0			
Zinc	0.0448	0.0050	0.05	0.005857	77.9	83-118	0			S

MS Sample ID: **0404224-01BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:36**

Client ID: Run ID: **ICP4500_040426A** SeqNo: **461552** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.07028	0.010	0.05	0.0299	80.8	79-126	0			
Barium	0.1087	0.0050	0.05	0.06148	94.4	79.8-119	0			
Cadmium	0.04313	0.0020	0.05	0.00004538	86.2	79.1-119	0			
Manganese	0.2705	0.0050	0.05	0.2719	-2.8	82-119	0			SO
Sodium	ND	0.20	5	0	0	82.4-120	0			S

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MSD Sample ID: **0404224-01BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:50**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461046** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04407	0.0050	0.05	0	88.1	80-121	0.04389	0.409	15	
Beryllium	0.04221	0.0020	0.05	0	84.4	78.9-120	0.042	0.499	15	
Boron	0.7214	0.020	0.5	0.2598	92.3	80-120	0.7191	0.319	15	
Calcium	92.75	0.50	5	93.33	-11.6	80-121	93.06	0.334	15	SEO
Chromium	0.04803	0.0050	0.05	0.006417	83.2	79.3-121	0.04948	2.97	15	
Cobalt	0.05005	0.0050	0.05	0.00133	97.4	82-121	0.04981	0.481	15	
Copper	0.04322	0.0050	0.05	0.002979	80.5	83-121	0.0431	0.278	15	S
Iron	4.766	0.20	5	0.1243	92.8	80-120	4.66	2.25	15	
Lead	0.04262	0.0050	0.05	0	85.2	80-118	0.04051	5.08	15	
Magnesium	51.22	0.20	5	49.37	37	80-120	51.14	0.156	15	SEO
Molybdenum	0.04613	0.0050	0.05	0	92.3	84.6-115	0.04417	4.34	15	
Nickel	0.04619	0.0050	0.05	0.004771	82.8	85-120	0.04601	0.39	15	S
Potassium	7.684	0.20	5	3.122	91.2	80-120	7.558	1.65	15	
Selenium	0.04272	0.0050	0.05	0	85.4	79.2-118	0.04085	4.48	15	
Silver	0.04295	0.0050	0.05	0	85.9	83-117	0.04288	0.163	15	
Vanadium	0.04793	0.0050	0.05	0.00121	93.4	82.1-119	0.04877	1.74	15	
Zinc	0.04712	0.0050	0.05	0.005857	82.5	83-118	0.0448	5.05	15	S

MSD Sample ID: **0404224-01BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:40**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461553** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.06893	0.010	0.05	0.0299	78.1	79-126	0.07028	1.94	15	S
Barium	0.1072	0.0050	0.05	0.06148	91.4	79.8-119	0.1087	1.39	15	
Cadmium	0.04234	0.0020	0.05	0.00004538	84.6	79.1-119	0.04313	1.85	15	
Manganese	0.282	0.0050	0.05	0.2719	20.2	82-119	0.2705	4.16	15	SO
Sodium	ND	0.20	5	0	0	82.4-120	0	0	15	S

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

DUP Sample ID: **0404224-01BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:38**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461044** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050	0	0	0	0-0	0	0	25	
Beryllium	ND	0.0020	0	0	0	0-0	0	0	25	
Boron	0.2667	0.020	0	0	0	0-0	0.2598	2.62	25	
Calcium	91.36	0.50	0	0	0	0-0	93.33	2.13	25	
Chromium	0.00664	0.0050	0	0	0	0-0	0.006417	3.42	25	
Cobalt	0.00117	0.0050	0	0	0	0-0	0.00133	0	25	J
Copper	0.001621	0.0050	0	0	0	0-0	0.002979	0	25	J
Iron	0.05559	0.20	0	0	0	0-0	0.1243	0	25	J
Lead	ND	0.0050	0	0	0	0-0	0	0	25	
Magnesium	48.97	0.20	0	0	0	0-0	49.37	0.814	25	
Molybdenum	ND	0.0050	0	0	0	0-0	0	0	25	
Nickel	0.003749	0.0050	0	0	0	0-0	0.004771	0	25	J
Potassium	3.103	0.20	0	0	0	0-0	3.122	0.61	25	
Selenium	ND	0.0050	0	0	0	0-0	0	0	25	
Silver	ND	0.0050	0	0	0	0-0	0	0	25	
Vanadium	0.001906	0.0050	0	0	0	0-0	0.00121	0	25	J
Zinc	0.005431	0.0050	0	0	0	0-0	0.005857	7.55	25	

DUP Sample ID: **0404224-01BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:31**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461551** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.02567	0.010	0	0	0	0-0	0.0299	15.2	25	
Barium	0.05997	0.0050	0	0	0	0-0	0.06148	2.49	25	
Cadmium	ND	0.0020	0	0	0	0-0	0.00004538	0	25	
Manganese	0.2372	0.0050	0	0	0	0-0	0.2719	13.6	25	
Sodium	ND	0.20	0	0	0	0-0	0	0	25	

The following samples were analyzed in this batch: 0404204-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

MBLK Sample ID: **SBLKW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 13:26**
Client ID: Run ID: **SV-3_040420A** SeqNo: **459019** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
2-Nitroaniline	ND	10								
2-Nitrophenol	ND	10								
3-Nitroaniline	ND	10								
4-Methylphenol	ND	10								
4-Nitroaniline	ND	10								
4-Nitrophenol	ND	10								
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	10								
Benzidine	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
Nitrobenzene	ND	10								
Pentachlorophenol	ND	10								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
1,4-Dichlorobenzene-d4	40	0								
Acenaphthene-d10	40	0								
Chrysene-d12	40	0								
Naphthalene-d8	40	0								
Perylene-d12	40	0								
Phenanthrene-d10	40	0								
Surr: 2,4,6-Tribromophenol	88.77	0	100	0	88.8	39-153	0			
Surr: 2-Fluorobiphenyl	78.31	0	100	0	78.3	40-147	0			
Surr: 2-Fluorophenol	39.53	0	100	0	39.5	21-110	0			
Surr: 4-Terphenyl-d14	90.32	0	100	0	90.3	39-141	0			
Surr: Nitrobenzene-d5	76.72	0	100	0	76.7	37-140	0			
Surr: Phenol-d6	25.07	0	100	0	25.1	11-100	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

LCS Sample ID: **SLCSW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 13:54**

Client ID: Run ID: **SV-3_040420A** SeqNo: **459020** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	40.6	10	50	0	81.2	50-115	0			
2,4,5-Trichlorophenol	93.23	10	100	0	93.2	68-128	0			
2,4,6-Trichlorophenol	92.14	10	100	0	92.1	66-125	0			
2-Methylnaphthalene	43.58	10	50	0	87.2	47-122	0			
2-Methylphenol	73.86	10	100	0	73.9	51-115	0			
2-Nitroaniline	45.04	10	50	0	90.1	64-128	0			
2-Nitrophenol	89.08	10	100	0	89.1	60-119	0			
3-Nitroaniline	40.23	10	50	0	80.5	61-118	0			
4-Methylphenol	98.5	10	150	0	65.7	44-115	0			
4-Nitroaniline	43.3	10	50	0	86.6	61-123	0			
4-Nitrophenol	48.31	10	100	0	48.3	17-100	0			
Acenaphthene	45.76	10	50	0	91.5	68-115	0			
Acenaphthylene	45.65	10	50	0	91.3	67-116	0			
Aniline	28.21	10	50	0	56.4	40-130	0			
Anthracene	48.93	10	50	0	97.9	70-129	0			
Benz(a)anthracene	45.11	10	50	0	90.2	55-131	0			
Benzidine	11.24	10	50	0	22.5	10-115	0			
Hexachloroethane	34.76	10	50	0	69.5	46-115	0			
Indeno(1,2,3-cd)pyrene	43.24	10	50	0	86.5	42-123	0			
Isophorone	45.34	10	50	0	90.7	63-117	0			
N-Nitrosodi-n-propylamine	42.51	10	50	0	85	67-115	0			
N-Nitrosodimethylamine	20.37	10	50	0	40.7	28-115	0			
N-Nitrosodiphenylamine	50.92	10	50	0	102	72-144	0			
Naphthalene	43.38	10	50	0	86.8	52-115	0			
Nitrobenzene	43.94	10	50	0	87.9	65-115	0			
Pentachlorophenol	90.05	10	100	0	90.1	65-123	0			
Phenanthrene	47.52	10	50	0	95	69-119	0			
Phenol	36.05	10	100	0	36	16-115	0			
Pyrene	47.36	10	50	0	94.7	51-130	0			
Surr: 2,4,6-Tribromophenol	93.36	0	100	0	93.4	39-153	0			
Surr: 2-Fluorobiphenyl	83.05	0	100	0	83.1	40-147	0			
Surr: 2-Fluorophenol	49.92	0	100	0	49.9	21-110	0			
Surr: 4-Terphenyl-d14	88.63	0	100	0	88.6	39-141	0			
Surr: Nitrobenzene-d5	82.09	0	100	0	82.1	37-140	0			
Surr: Phenol-d6	33.05	0	100	0	33.1	11-100	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

LCSD Sample ID: **SLCSDW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 14:22**
Client ID: Run ID: **SV-3_040420A** SeqNo: **459021** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	39.79	10	50	0	79.6	50-115	40.6	2.02	30	
2,4,5-Trichlorophenol	94.78	10	100	0	94.8	68-128	93.23	1.65	30	
2,4,6-Trichlorophenol	91.71	10	100	0	91.7	66-125	92.14	0.466	30	
2-Methylnaphthalene	42.71	10	50	0	85.4	47-122	43.58	2.02	30	
2-Methylphenol	72.91	10	100	0	72.9	51-115	73.86	1.29	30	
2-Nitroaniline	45.85	10	50	0	91.7	64-128	45.04	1.79	30	
2-Nitrophenol	87.85	10	100	0	87.9	60-119	89.08	1.38	30	
3-Nitroaniline	42.4	10	50	0	84.8	61-118	40.23	5.26	30	
4-Methylphenol	96.55	10	150	0	64.4	44-115	98.5	2	30	
4-Nitroaniline	45.04	10	50	0	90.1	61-123	43.3	3.94	30	
4-Nitrophenol	46.98	10	100	0	47	17-100	48.31	2.79	30	
Acenaphthene	45.69	10	50	0	91.4	68-115	45.76	0.143	30	
Acenaphthylene	46.05	10	50	0	92.1	67-116	45.65	0.871	30	
Aniline	31.26	10	50	0	62.5	40-130	28.21	10.2	30	
Anthracene	49.18	10	50	0	98.4	70-129	48.93	0.515	30	
Benz(a)anthracene	46.68	10	50	0	93.4	55-131	45.11	3.43	30	
Benzidine	14.74	10	50	0	29.5	10-115	11.24	26.9	30	
Hexachloroethane	34.94	10	50	0	69.9	46-115	34.76	0.536	30	
Indeno(1,2,3-cd)pyrene	42.12	10	50	0	84.2	42-123	43.24	2.63	30	
Isophorone	45.59	10	50	0	91.2	63-117	45.34	0.551	30	
N-Nitrosodi-n-propylamine	42.8	10	50	0	85.6	67-115	42.51	0.683	30	
N-Nitrosodimethylamine	21.4	10	50	0	42.8	28-115	20.37	4.93	30	
N-Nitrosodiphenylamine	52.47	10	50	0	105	72-144	50.92	2.99	30	
Naphthalene	43.24	10	50	0	86.5	52-115	43.38	0.325	30	
Nitrobenzene	44.24	10	50	0	88.5	65-115	43.94	0.67	30	
Pentachlorophenol	92.67	10	100	0	92.7	65-123	90.05	2.86	30	
Phenanthrene	47.49	10	50	0	95	69-119	47.52	0.0615	30	
Phenol	35.19	10	100	0	35.2	16-115	36.05	2.42	30	
Pyrene	48.2	10	50	0	96.4	51-130	47.36	1.76	30	
Surr: 2,4,6-Tribromophenol	97.18	0	100	0	97.2	39-153	93.36	4.01	30	
Surr: 2-Fluorobiphenyl	82.79	0	100	0	82.8	40-147	83.05	0.309	30	
Surr: 2-Fluorophenol	48.74	0	100	0	48.7	21-110	49.92	2.38	30	
Surr: 4-Terphenyl-d14	91.01	0	100	0	91	39-141	88.63	2.65	30	
Surr: Nitrobenzene-d5	81.51	0	100	0	81.5	37-140	82.09	0.704	30	
Surr: Phenol-d6	32.74	0	100	0	32.7	11-100	33.05	0.962	30	

The following samples were analyzed in this batch: 0404204-01E

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MBLK Sample ID: **VBLKW-0426** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 16:10**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461696** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	43.15	5.0	50	0	86.3	71-126		0		
Surr: 4-Bromofluorobenzene	41.57	5.0	50	0	83.1	74-125		0		
Surr: Dibromofluoromethane	44.88	5.0	50	0	89.8	73-126		0		
Surr: Toluene-d8	48.66	5.0	50	0	97.3	75-125		0		

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

LCS Sample ID: **VLCSW-0426** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 15:43**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461695** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	49.86	5.0	50	0	99.7	75.2-120	0			
1,1,2,2-Tetrachloroethane	50.86	5.0	50	0	102	72.4-121	0			
1,1,2-Trichloroethane	52.15	5.0	50	0	104	80-120	0			
1,1-Dichloroethane	49.93	5.0	50	0	99.9	76.9-120	0			
1,1-Dichloroethene	49.39	5.0	50	0	98.8	72.6-123	0			
1,2-Dichloroethane	50.49	5.0	50	0	101	80-120	0			
2-Butanone	99.63	10	100	0	99.6	69-131	0			
2-Chloroethyl vinyl ether	99.8	10	100	0	99.8	60-135	0			
2-Hexanone	97.97	10	100	0	98	55.6-126	0			
4-Methyl-2-pentanone	97.33	10	100	0	97.3	67.4-121	0			
Acetone	99.72	10	100	0	99.7	64.4-140	0			
Benzene	54.77	5.0	50	0	110	80-120	0			
Bromodichloromethane	51.45	5.0	50	0	103	80-120	0			
Bromoform	52.72	5.0	50	0	105	77.9-121	0			
Bromomethane	52.18	5.0	50	0	104	63.3-137	0			
Carbon disulfide	97.47	10	100	0	97.5	74.1-123	0			
Carbon tetrachloride	49.18	5.0	50	0	98.4	74.7-120	0			
Chlorobenzene	52.56	5.0	50	0	105	80-120	0			
Chloroethane	49.06	5.0	50	0	98.1	74.7-126	0			
Chloroform	49.98	5.0	50	0	100	80-120	0			
Chloromethane	52.35	5.0	50	0	105	64.5-132	0			
cis-1,3-Dichloropropene	51.16	5.0	50	0	102	80-120	0			
Dibromochloromethane	52.1	5.0	50	0	104	80-120	0			
Ethylbenzene	51.56	5.0	50	0	103	80-120	0			
m,p-Xylene	109	10	100	0	109	80-120	0			
Methylene chloride	49.11	10	50	0	98.2	76.2-120	0			
Styrene	52.36	5.0	50	0	105	80-120	0			
Tetrachloroethene	52.55	5.0	50	0	105	68.5-130	0			
Toluene	56.67	5.0	50	0	113	80-120	0			
trans-1,3-Dichloropropene	52.02	5.0	50	0	104	80-120	0			
Trichloroethene	53.22	5.0	50	0	106	78.9-120	0			
Vinyl acetate	103.3	10	100	0	103	62.4-133	0			
Vinyl chloride	52.37	2.0	50	0	105	72.7-128	0			
Xylenes, Total	161.3	15	150	0	108	80-120	0			
Surr: 1,2-Dichloroethane-d4	44.07	5.0	50	0	88.1	71-126	0			
Surr: 4-Bromofluorobenzene	48.33	5.0	50	0	96.7	74-125	0			
Surr: Dibromofluoromethane	46.93	5.0	50	0	93.9	73-126	0			
Surr: Toluene-d8	51.73	5.0	50	0	103	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MS Sample ID: **0404140-01AMS** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 17:04**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461698** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	46.99	5.0	50	0	94	75.2-120	0			
1,1,2,2-Tetrachloroethane	55.71	5.0	50	0	111	72.4-121	0			
1,1,2-Trichloroethane	56.18	5.0	50	0	112	80-120	0			
1,1-Dichloroethane	50.64	5.0	50	0	101	76.9-120	0			
1,1-Dichloroethene	45.53	5.0	50	0	91.1	72.6-123	0			
1,2-Dichloroethane	56.23	5.0	50	0	112	80-120	0			
2-Butanone	113.1	10	100	0	113	69-131	0			
2-Chloroethyl vinyl ether	29.77	10	100	0	29.8	60-135	0			S
2-Hexanone	103.6	10	100	0	104	55.6-126	0			
4-Methyl-2-pentanone	107.3	10	100	0	107	67.4-121	0			
Acetone	122.7	10	100	0	123	64.4-140	0			
Benzene	68.48	5.0	50	13.29	110	80-120	0			
Bromodichloromethane	54.16	5.0	50	0	108	80-120	0			
Bromoform	57.02	5.0	50	0	114	77.9-121	0			
Bromomethane	48.3	5.0	50	0	96.6	63.3-137	0			
Carbon disulfide	92.16	10	100	0	92.2	74.1-123	0			
Carbon tetrachloride	44.33	5.0	50	0	88.7	74.7-120	0			
Chlorobenzene	52.92	5.0	50	0	106	80-120	0			
Chloroethane	49.87	5.0	50	0	99.7	74.7-126	0			
Chloroform	52.4	5.0	50	0	105	80-120	0			
Chloromethane	40.76	5.0	50	0	81.5	64.5-132	0			
cis-1,3-Dichloropropene	53.59	5.0	50	0	107	80-120	0			
Dibromochloromethane	56.69	5.0	50	0	113	80-120	0			
Ethylbenzene	53.81	5.0	50	5.363	96.9	80-120	0			
m,p-Xylene	108	10	100	0	108	80-120	0			
Methylene chloride	51.99	10	50	0	104	76.2-120	0			
Styrene	53.04	5.0	50	0	106	80-120	0			
Tetrachloroethene	47.56	5.0	50	0	95.1	68.5-130	0			
Toluene	57.7	5.0	50	0	115	80-120	0			
trans-1,3-Dichloropropene	54.22	5.0	50	0	108	80-120	0			
Trichloroethene	51.82	5.0	50	0	104	78.9-120	0			
Vinyl acetate	115.6	10	100	0	116	62.4-133	0			
Vinyl chloride	46.65	2.0	50	0	93.3	72.7-128	0			
Xylenes, Total	159.4	15	150	0	106	80-120	0			
Surr: 1,2-Dichloroethane-d4	45.28	5.0	50	0	90.6	71-126	0			
Surr: 4-Bromofluorobenzene	46.72	5.0	50	0	93.4	74-125	0			
Surr: Dibromofluoromethane	45.67	5.0	50	0	91.3	73-126	0			
Surr: Toluene-d8	49.6	5.0	50	0	99.2	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MSD Sample ID: **0404140-01AMSD** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 17:31**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461699** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.61	5.0	50	0	95.2	75.2-120	46.99	1.3	20	
1,1,2,2-Tetrachloroethane	58.66	5.0	50	0	117	72.4-121	55.71	5.15	20	
1,1,2-Trichloroethane	57.07	5.0	50	0	114	80-120	56.18	1.57	20	
1,1-Dichloroethane	52.15	5.0	50	0	104	76.9-120	50.64	2.93	20	
1,1-Dichloroethene	47.56	5.0	50	0	95.1	72.6-123	45.53	4.37	20	
1,2-Dichloroethane	56.12	5.0	50	0	112	80-120	56.23	0.194	20	
2-Butanone	123.6	10	100	0	124	69-131	113.1	8.82	20	
2-Chloroethyl vinyl ether	23.17	10	100	0	23.2	60-135	29.77	25	20	SR
2-Hexanone	117.7	10	100	0	118	55.6-126	103.6	12.7	20	
4-Methyl-2-pentanone	113.2	10	100	0	113	67.4-121	107.3	5.34	20	
Acetone	121	10	100	0	121	64.4-140	122.7	1.35	20	
Benzene	76.21	5.0	50	13.29	126	80-120	68.48	10.7	20	S
Bromodichloromethane	55.67	5.0	50	0	111	80-120	54.16	2.76	20	
Bromoform	58	5.0	50	0	116	77.9-121	57.02	1.7	20	
Bromomethane	52.67	5.0	50	0	105	63.3-137	48.3	8.66	20	
Carbon disulfide	97.42	10	100	0	97.4	74.1-123	92.16	5.55	20	
Carbon tetrachloride	48.19	5.0	50	0	96.4	74.7-120	44.33	8.33	20	
Chlorobenzene	54.6	5.0	50	0	109	80-120	52.92	3.12	20	
Chloroethane	48.51	5.0	50	0	97	74.7-126	49.87	2.77	20	
Chloroform	51.44	5.0	50	0	103	80-120	52.4	1.86	20	
Chloromethane	39.8	5.0	50	0	79.6	64.5-132	40.76	2.39	20	
cis-1,3-Dichloropropene	54.6	5.0	50	0	109	80-120	53.59	1.87	20	
Dibromochloromethane	57.63	5.0	50	0	115	80-120	56.69	1.66	20	
Ethylbenzene	59.41	5.0	50	5.363	108	80-120	53.81	9.89	20	
m,p-Xylene	113.6	10	100	0	114	80-120	108	5.11	20	
Methylene chloride	51.27	10	50	0	103	76.2-120	51.99	1.39	20	
Styrene	53.78	5.0	50	0	108	80-120	53.04	1.38	20	
Tetrachloroethene	51.92	5.0	50	0	104	68.5-130	47.56	8.76	20	
Toluene	58.21	5.0	50	0	116	80-120	57.7	0.887	20	
trans-1,3-Dichloropropene	55.32	5.0	50	0	111	80-120	54.22	2.02	20	
Trichloroethene	54.68	5.0	50	0	109	78.9-120	51.82	5.36	20	
Vinyl acetate	122.1	10	100	0	122	62.4-133	115.6	5.48	20	
Vinyl chloride	49.69	2.0	50	0	99.4	72.7-128	46.65	6.32	20	
Xylenes, Total	166.7	15	150	0	111	80-120	159.4	4.5	20	
Surr: 1,2-Dichloroethane-d4	44.05	5.0	50	0	88.1	71-126	45.28	2.75	20	
Surr: 4-Bromofluorobenzene	46.87	5.0	50	0	93.7	74-125	46.72	0.319	20	
Surr: Dibromofluoromethane	44.77	5.0	50	0	89.5	73-126	45.67	1.99	20	
Surr: Toluene-d8	48.96	5.0	50	0	97.9	75-125	49.6	1.31	20	

The following samples were analyzed in this batch: 0404204-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19955** InstrumentID: **Wet Chemistry**

LCS Sample ID: **WLCSW1-041704** Test Code: **E150.1** Units: **pH units** Analysis Date: **04/17/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **457306** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	5.98	0.10	6	0	99.7	85-115	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E150.1** Units: **pH units** Analysis Date: **04/17/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **457308** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.12	0.10	0	0	0	0-0	6.11	0.164	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19973** InstrumentID: **IC201**

MBLK Sample ID: **WBLKW1-041704** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 16:11**
Client ID: Run ID: **IC201_040417B** SeqNo: **457720** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	1.0								
Surr: Dichloroacetic acid (surr)	4.57	0.10	5	0	91.4	80-120	0			

LCS Sample ID: **WLCSW1-041704** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 16:39**
Client ID: Run ID: **IC201_040417B** SeqNo: **457721** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.03	0.50	10	0	90.3	80-120	0			
Fluoride	1.83	0.10	2	0	91.5	80-120	0			
Nitrogen, Nitrate (As N)	1.86	0.10	2	0	93	80-120	0			
Sulfate	9.56	1.0	10	0	95.6	80-120	0			
Surr: Dichloroacetic acid (surr)	5	0.10	5	0	100	80-120	0			

LCSD Sample ID: **WLCSDW1-04170** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 17:08**
Client ID: Run ID: **IC201_040417B** SeqNo: **457722** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.03	0.50	10	0	90.3	80-120	9.03	0	20	
Fluoride	1.84	0.10	2	0	92	80-120	1.83	0.545	20	
Nitrogen, Nitrate (As N)	1.85	0.10	2	0	92.5	80-120	1.86	0.539	20	
Sulfate	9.56	1.0	10	0	95.6	80-120	9.56	0	20	
Surr: Dichloroacetic acid (surr)	5.13	0.10	5	0	103	80-120	5	2.57	20	

MS Sample ID: **0404204-01CMS** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 18:33**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457725** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1306	0.50	10	1316	-95.2	75-125	0			SEO
Fluoride	4.31	0.10	2	2.44	93.5	75-125	0			
Nitrogen, Nitrate (As N)	10.08	0.10	2	7.99	104	75-125	0			E
Sulfate	332.6	1.0	10	326.5	61.4	75-125	0			SEO
Surr: Dichloroacetic acid (surr)	4.91	0.10	5	0	98.2	80-120	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19973** InstrumentID: **IC201**

MSD Sample ID: **0404204-01CMSD** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 19:02**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457726** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1305	0.50	10	1316	-108	75-125	1306	0.0996	20	SEO
Fluoride	4.38	0.10	2	2.44	97	75-125	4.31	1.61	20	
Nitrogen, Nitrate (As N)	10.08	0.10	2	7.99	104	75-125	10.08	0	20	E
Sulfate	332.4	1.0	10	326.5	59.4	75-125	332.6	0.0601	20	SEO
Surr: Dichloroacetic acid (surr)	4.29	0.10	5	0	85.8	80-120	4.91	13.5	20	

DUP Sample ID: **0404204-01CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 18:05**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457724** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1316	0.50	0	0	0	0-0	1316	0.0327	20	E
Fluoride	2.44	0.10	0	0	0	0-0	2.44	0	20	
Nitrogen, Nitrate (As N)	7.99	0.10	0	0	0	0-0	7.99	0	20	
Sulfate	326.1	1.0	0	0	0	0-0	326.5	0.104	20	E
Surr: Dichloroacetic acid (surr)	4.86	0.10	5	0	97.2	80-120	5.02	3.24	20	

DUP Sample ID: **0404204-01CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 20:56**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457729** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1044	25	0	0	0	0-0	1046	0.144	20	
Fluoride	ND	5.0	0	0	0	0-0	0	0	20	
Nitrogen, Nitrate (As N)	14	5.0	0	0	0	0-0	14.5	3.51	20	
Sulfate	264	50	0	0	0	0-0	268	1.5	20	
Surr: Dichloroacetic acid (surr)	246.5	5.0	250	0	98.6	80-120	248.5	0.808	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20006** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458672** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	ND	1.0								

LCS Sample ID: **WLCSW1-042004** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458673** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	1410	1.0	1409	0	100	80-120	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **458675** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	3760	1.0	0	0	0	0-0	3790	0.795	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20007** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458676** Prep Date: DF: **1**

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

LCS Sample ID: **WLCW1-042004** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458677** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	92	2.0	100	0	92	71-114		0		

DUP Sample ID: **0404204-01CDUP** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **458682** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	4	2.0	0	0	0	0-0	4	0	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20016** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458968** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	ND	10								

LCS Sample ID: **WLCSW1-042004** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458969** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	888	10	1000	0	88.8	80-120		0		

DUP Sample ID: **0404179-01JDUP** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458978** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	6930	10	0	0	0	0-0	6928	0.0289	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20095** InstrumentID: **UV-2101PC**

MBLK Sample ID: **WMBW1-042404** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461007** Prep Date: DF: **1**

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

LCS Sample ID: **WLCSW1-042404** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461008** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2065	0.020	0.2	0	103	80-120	0			

MS Sample ID: **0404261-21FMS** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461023** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2067	0.020	0.2	0.0006	103	75-125	0			

MSD Sample ID: **0404261-21FMSD** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461024** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2022	0.020	0.2	0.0006	101	75-125	0.2067	2.2	25	

DUP Sample ID: **0404261-21FDUP** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461026** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	0.0006	0	20	

The following samples were analyzed in this batch: 0404204-01D

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20161** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WBLKW1-042804** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **462861** Prep Date: DF: **1**

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

LCS Sample ID: **WLCSW1-042804** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **462862** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1000	5.0	1000	0	100	80-120	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **462864** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	110	5.0	0	0	0	0-0	110	0	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	110	5.0	0	0	0	0-0	110	0	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

Chain of Custody Form

☑ e-Lab, Inc.
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

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

QUALITY • INTEGRITY • SERVICE

Page 1 of 2

e-Lab Project Manager:

e-Lab Work Order #: 1404204

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	RO Annual	A	Cyanice. Total
Work Order		Project Number	LOVINGTON R.O.	B	Phenoiics
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	pH
Send Report To	Charlie Plymale	Invoice Attn	Charlie Plymale	D	Solids: TDS TSS
Address	P.O. Box 159	Address	P.O. Box 159	E	Raduim 226+228
				F	Uranuim
City/State/Zip	Artesia, New Mexico 88211	City/State/Zip	Artesia, New Mexico 88211	G	~~Fecal Coliform~~
Phone	(505) 748-3311	Phone	(505) 748-3311	H	Residual Chlorine
Fax	(505) 746-5421	Fax	(505) 746-5421	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	R.O. Reject Water	4-16-04	8:00	Water	Yes	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Steve H Terry Steve H Terry

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Steve H Terry — Date: 4-16-04 — Time: 8:00

Relinquished by: — Date: — Time:

Received by:

Received by (Laboratory): 4/17/04 08:45 am

Logged by (Laboratory): — Date: — Time:

Checked by (Laboratory):

Notes:

e-lab Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level I Std QC
- ☐ Level II Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

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

e-Lab, Inc.
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

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

Page 1 of 1

e-Lab Project Manager: | e-Lab Work Order #: 0404204

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	RO Annual	A	Tot. Metals WACC + Cations
Work Order		Project Number	LOVINGTON R.O.	B	PCBs 8082
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	Pesticides 8081
Send Report To	Charlie Plymale	Invoice Attn	Charlie Plymale	D	Semivolatiles Other 8270
Address	P.O. Box 159	Address	P.O. Box 159	E	Volatiles Other 8260
				F	Anions: Cl, NO3, F, SO4, Conductivity
City/State/Zip	Artesia, New Mexico 88211	City/State/Zip	Artesia, New Mexico 88211	G	Alkalinity
Phone	(505) 748-3311	Phone	(505) 748-3311	H	Ammonia
Fax	(505) 746-5421	Fax	(505) 746-5421	I	BOD
e-Mail Address		e-Mail Address		J	COD

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	R.O. Reject Water	4-16-04	9:00	Water	YES	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Steve Henry Steve Henry

Shipment Method:

Required Turnaround Time: (Check Box) ☐ STD 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Steve Henry	Date: 4-16-04	Time: 9:00 Am	Received by:	Notes:
Relinquished by:	Date:	Time:	Received by (Laboratory): 4/17/04 08:45 a.m.	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

e-lab Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level I Std QC
- ☐ Level II Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

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

e-Lab, Inc.

Sample Receipt Checklist

Client Name NAVAJO REFINING Date/Time Received: 4/17/2004 8:45:00 AM

Work Order Number 0404204 Received by: RNG

Checklist completed by [signature] 4/17/04 (Signature / Date) Reviewed by [initials] 4/19/04 (Initials / Date)

Matrix: W Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c, 2.4c	004	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐

Adjusted? _____ Checked by _____

Login Notes:

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted NAVAJO Date contacted: 4/19/04 Person contacted Steve Terry / Darrell Moore

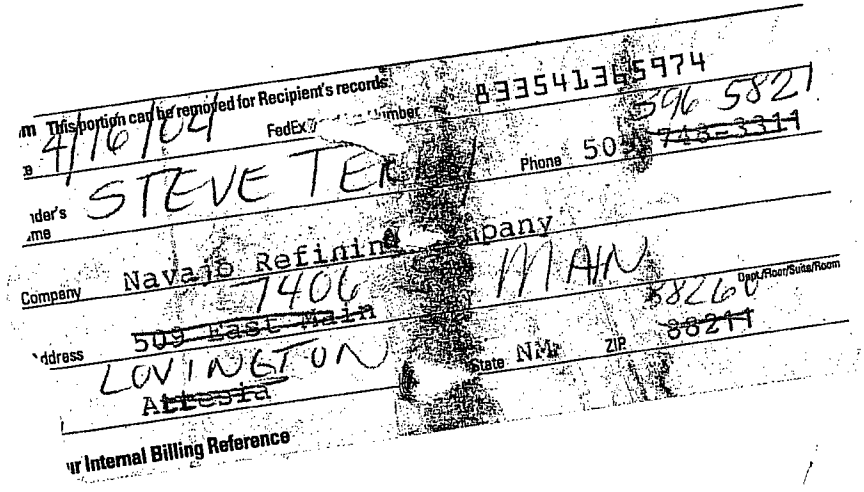
Contacted by: Jeff Croston Regarding: 4 Sample RO Reject Water Exceeding Hold Times For BOD / Residual Chlorine

Comments:

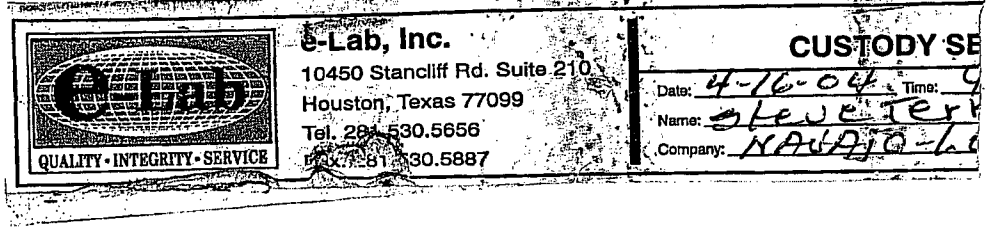
Talked to Darrell and informed him that Samples had ~~were~~ exceed their hold times.

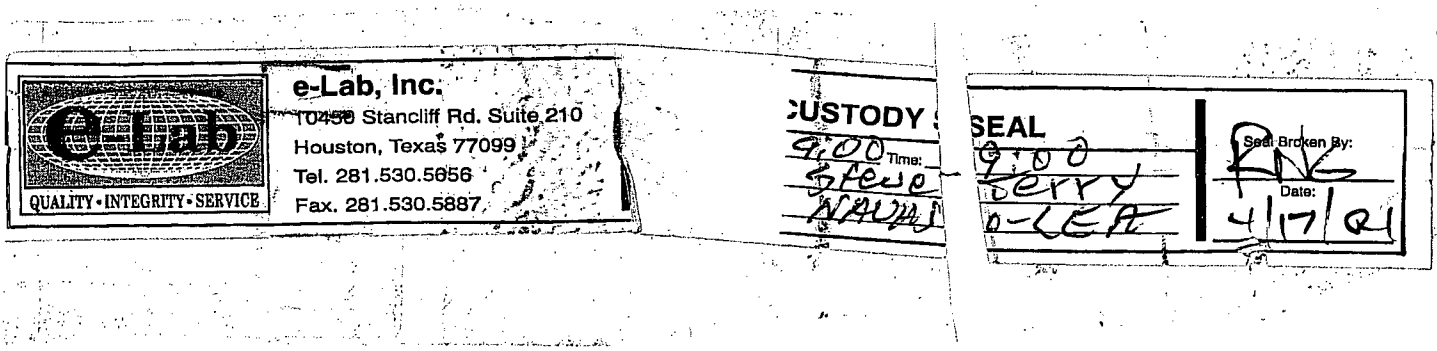
Corrective Action

0404204


This portion can be removed for Recipient's records
FedEx
8335 4136 5974
4/16/04
STEVE TER
Phone 505 748-3311
Company Navajo Refining Company
Address 501 East Main
LOVINGTON
State NM ZIP 88260
Dept./Room/Suite/Room
Your Internal Billing Reference


emp: 421764 16APR04
PRIORITY SATURDAY
FedEx.
Master 8335 4136 5974 FORM 0215
0002/0002 MPS#:8343 3244 1119 FORM 0260
Deliver
17Apr04
A2
IAH
77099 -TX-US
X0 JGQA


e-Lab
QUALITY • INTEGRITY • SERVICE
e-Lab, Inc.
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
Tel. 281.530.5656
Fax. 281.530.5887
CUSTODY SE
Date: 4-16-04 Time:
Name: Steve Terr
Company: NAVAJO-Le
Seal Broken By:
RNG
Date:
4/17/04


e-Lab
QUALITY • INTEGRITY • SERVICE
e-Lab, Inc.
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
Tel. 281.530.5656
Fax. 281.530.5887
CUSTODY
4:00 Time:
Steve
NAVAJ
SEAL
4:00
Terry
O-LEA
Seal Broken By:
RNG
Date:
4/17/04

e-Lab, Inc

Date: *April 28, 2004*

CLIENT: e-Lab, Inc
Project: 0404204
Work Order: **0404366**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0404366-01	0404204-01I	Water		4/16/2004 08:00	4/23/2004 10:30	☐
0404366-02	0404204-01J	Water		4/16/2004 08:00	4/23/2004 10:30	☐
0404366-03	0404204-01N	Water		4/16/2004 08:00	4/23/2004 10:30	☐

e-Lab, Inc **Date:** *April 28, 2004*

CLIENT: e-Lab, Inc **Work Order:** 0404366
Project: 0404204

Lab ID: 0404366-01A **Collection Date:** 4/16/2004 8:00:00 AM
Client Sample ID: 0404204-01I **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
CHEMICAL OXYGEN DEMAND		**EPA 410.4**				Analyst: **JDA**
Chemical Oxygen Demand	59.6	5.00		mg/L	1	4/23/2004

Lab ID: 0404366-02A **Collection Date:** 4/16/2004 8:00:00 AM
Client Sample ID: 0404204-01J **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
NITROGEN, AMMONIA		**EPA 350.1**				Analyst: **JDA**
Nitrogen, Ammonia	ND	0.0625		mg/L	1.25	4/26/2004

Lab ID: 0404366-03A **Collection Date:** 4/16/2004 8:00:00 AM
Client Sample ID: 0404204-01N **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		**EPA 420.1**				Analyst: **KZ**
Phenolics, Total	ND	0.0500		mg/L	1	4/28/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

Date: *Apr 28 2004*

QC BATCH REPORT

Batch ID: **R20695** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLKW1-042304** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302307** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	5.0								

LCS Sample ID: **WLCSW1-042304** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302308** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	629.9	5.0	600	0	105	75-125		0		

LCSD Sample ID: **WLCSDW1-04230** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302317** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	629.9	5.0	600	0	105	75-125	629.9	0	20	

MS Sample ID: **0404369-03A MS** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302318** Prep Date: DF: **1.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	1869	7.5	600	1362	84.5	70-130		0		

MSD Sample ID: **0404369-03A MSD** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302319** Prep Date: DF: **1.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	1920	7.5	600	1362	93	70-130	1869	2.69	20	

The following samples were analyzed in this batch: 0404366-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

QC BATCH REPORT

Batch ID: **R20712** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLKW1-042604** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302527** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	ND	0.050								

LCS Sample ID: **WLCSW1-042604** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302528** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.2888	0.050	0.3	0	96.3	80-120		0		

LCSD Sample ID: **WLCSDW1-04260** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302555** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.2888	0.050	0.3	0	96.3	80-120	0.2888	0	20	

MS Sample ID: **0404366-02A MS** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: **0404204-01J** Run ID: **WETCHEM_040426C** SeqNo: **302556** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.7032	0.12	0.6	0.04888	109	75-125		0		

MSD Sample ID: **0404366-02A MSD** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: **0404204-01J** Run ID: **WETCHEM_040426C** SeqNo: **302557** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.7032	0.12	0.6	0.04888	109	75-125	0.7032	0	20	

The following samples were analyzed in this batch: 0404366-02A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

QC BATCH REPORT

Batch ID: **R20756** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLK** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303177** Prep Date: DF: **1**

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

LCS Sample ID: **WLCS** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303178** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.2123	0.050	0.2	0	106	80-120		0		

LCSD Sample ID: **WLCSD** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303182** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.2066	0.050	0.2	0	103	80-120	0.2123	2.72	20	

MS Sample ID: **0404366-03A MS** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: **0404204-01N** Run ID: **WETCHEM_040428E** SeqNo: **303180** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.4882	0.12	0.5	0.01355	94.9	75-125		0		

MSD Sample ID: **0404366-03A MSD** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: **0404204-01N** Run ID: **WETCHEM_040428E** SeqNo: **303181** Prep Date: DF: **3.125**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.6635	0.16	0.625	0.01355	104	75-125	0.4882	30.4	20	R

The following samples were analyzed in this batch: 0404366-03A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

0409366

Subcontractor: e-Lab, Inc. (address partly illegible) Holland, MI 49424

TEL: (616) 399-6070
FAX: (616) 399-6185
Acct #:

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: Apr. 19, 2004
COC ID: 1501
Due Date: 4/26/2004

Customer Information		Project Information		Parameter/Method Request for Analysis
Purchase Order	2126040	Project Name	0404204	A Ammonia as N (E350.1)
Work Order		Project Number		B Chemical Oxygen Demand (E410.4)
Company Name	e-Lab, Inc.	Bill To Company	e-Lab, Inc.	C Phenolics (E420.2)
Send Report To	Jeffrey L. Cmarm	Inv Attn	Accounts Payable	D
Address	10450 Stancliff Rd, Suite 210	Address	10450 Stancliff Rd, Suite 210	E
				F
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip	Houston, Texas 77099-4338	G
Phone	(281) 530-5656	Phone	(281) 530-5656	H
Fax	(281) 530-5887	Fax	(281) 530-5887	I
eMail Address				J

	Sample ID	Matrix	Collection Date	Bottle	A	B	C	D	E	F	G	H	I	J
1	0404204-01I (R.O. Reject Water)	Water	4/16/2004 0:00	(1) 250PH2SO4		X								
2	0404204-01J (R.O. Reject Water)	Water	4/16/2004 0:00	(1) 500PH2SO4	X									
3	0404204-01N (R.O. Reject Water)	Water	4/16/2004 0:00	(2) 1LAMGH2SO4			X							

received 4/20/04 –
0404204-01M (2) (HNO3)
-01L (1) (Unp.)

* Samples received 4/23/04 1030

Comments:

Relinquished by	Date/Time	Received by	Date/Time	Cooler IDs	Report/QC Level
[signature]	4/19/04 [illegible]	[signature]	4/20/04 1030		Std

e-Lab, Inc

Sample Receipt Checklist

Client Name: ELAB-HOU

Date/Time Received: 4/23/2004 10:30:00 AM

Work Order Number: 0404389

Received by: WJC

Checklist completed by: (Signature) 4/23/04 (Date)

Reviewed by: (Initials) 4/23/04 (Date)

Matrix:

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shipping container/cooler?	Yes X	No	Not Present
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
Chain of custody present?	Yes ✓	No	
Chain of custody signed when relinquished and received?	Yes ✓	No	
Chain of custody agrees with sample labels?	Yes ✓	No	
Samples in proper container/bottle?	Yes ✓	No	
Sample containers intact?	Yes ✓	No	

ERROR: ioerror
OFFENDING COMMAND: flushfile

STACK:

-filestream-
-filestream-
-filestream-
-filestream-
-savelevel-

e-Lab, Inc.

10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 281-530-5656 Fax 281-530-5887

May 11, 2004

Charlie Plymale
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211

Tel: (505) 746-5241
Fax: (505) 746-5421

Re: RO Annual-Lovington Work Order : **0404204**

Dear Charlie Plymale,

e-Lab, Inc. received 3 samples on 4/17/2004 8:45:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Inc. The total number of pages in this report is 49.

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

Sincerely,

Jeffrey L Croston

Electronically approved by: Patrina A. Dathorne

Jeffrey L Croston

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Project: RO Annual-Lovington
Work Order: **0404204**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0404204-01	R.O. Reject Water	Water		4/16/2004 08:00	4/17/2004 08:45	☐
0404204-02	Trip Blank 0836	Water		4/16/2004	4/17/2004 08:45	☐
0404204-03	Trip Blank 0944	Water		4/16/2004	4/17/2004 08:45	☐

e-Lab, Inc. **Date:** *May 11, 2004*

CLIENT: Navajo Refining Company
Project: RO Annual-Lovington
Work Order: 0404204

Case Narrative

Batch 8754 Metals MS/MSD recoveries were outside of control limits on an unrelated sample.

Batch R20018 Volatiles MS/MSD/RPD recoveries were outside of control limits on an unrelated sample.

Batch R19973 Anions (sample R.O. Reject) MS/MSD recoveries were outside of control limits for Chloride and Sulfate. These recoveries should not be evaulated because the background concentrations are >4 times the spike amount and values exceeds the working linear calibration range.

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081**			Prep Date: **4/20/2004**	Analyst: **JLJ**
4,4'-DDD	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
4,4'-DDE	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
4,4'-DDT	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Aldrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
alpha-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
beta-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Chlordane	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
delta-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Dieldrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan I	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan II	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endosulfan sulfate	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin aldehyde	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Endrin ketone	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
gamma-BHC	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Heptachlor	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Heptachlor epoxide	ND	0.050		µg/L	1	4/21/2004 12:46:00 AM
Methoxychlor	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
Toxaphene	ND	0.50		µg/L	1	4/21/2004 12:46:00 AM
Surr: Decachlorobiphenyl	83.5	57.3-148		%REC	1	4/21/2004 12:46:00 AM
Surr: Tetrachloro-m-xylene	88.8	49.2-132		%REC	1	4/21/2004 12:46:00 AM
PCBS		**SW8082**			Prep Date: **4/20/2004**	Analyst: **JLJ**
Aroclor 1016	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1221	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1232	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1242	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1248	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1254	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Aroclor 1260	ND	0.50		µg/L	1	4/21/2004 2:57:00 AM
Surr: Decachlorobiphenyl	105	54.7-129		%REC	1	4/21/2004 2:57:00 AM
Surr: Tetrachloro-m-xylene	106	48-142		%REC	1	4/21/2004 2:57:00 AM
MERCURY, TOTAL		**SW7470**			Prep Date: **4/27/2004**	Analyst: **JCJ**
Mercury	ND	0.000200		mg/L	1	4/27/2004 4:45:56 PM
ICP METALS, TOTAL		**SW6020**			Prep Date: **4/23/2004**	Analyst: **ALR**
Aluminum	ND	0.0100		mg/L	1	4/26/2004 5:13:00 PM
Arsenic	0.0125	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Barium	0.293	0.00500		mg/L	1	4/26/2004 5:13:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
Beryllium	ND	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Boron	0.342	0.0200		mg/L	1	4/26/2004 5:13:00 PM
Cadmium	ND	0.00100		mg/L	1	4/26/2004 5:13:00 PM
Calcium	369	10.0		mg/L	20	4/27/2004 4:47:00 PM
Chromium	0.0129	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Cobalt	ND	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Copper	0.00303	0.00200		mg/L	1	4/26/2004 5:13:00 PM
Iron	0.677	0.200		mg/L	1	4/26/2004 5:13:00 PM
Lead	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Magnesium	44.2	0.200		mg/L	1	4/26/2004 5:13:00 PM
Manganese	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Molybdenum	0.00661	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Nickel	0.00525	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Potassium	6.78	0.200		mg/L	1	4/26/2004 5:13:00 PM
Selenium	0.0132	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Silver	ND	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Sodium	ND	0.200		mg/L	1	4/26/2004 5:13:00 PM
Vanadium	0.0668	0.00500		mg/L	1	4/26/2004 5:13:00 PM
Zinc	0.00504	0.00500		mg/L	1	4/26/2004 5:13:00 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270**			Prep Date: **4/19/2004**	Analyst: **JLJ**
1,2,4-Trichlorobenzene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2,4,5-Trichlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2,4,6-Trichlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Methylnaphthalene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Methylphenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
2-Nitrophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
3-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Methylphenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Nitroaniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
4-Nitrophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Acenaphthene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Acenaphthylene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Aniline	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Anthracene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Benz(a)anthracene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Benzidine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Hexachloroethane	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Isophorone	ND	11		µg/L	1	4/28/2004 12:23:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
N-Nitrosodimethylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
N-Nitrosodiphenylamine	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Naphthalene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Nitrobenzene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Pentachlorophenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Phenanthrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Phenol	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Pyrene	ND	11		µg/L	1	4/28/2004 12:23:00 AM
Surr: 2,4,6-Tribromophenol	86.5	39-153		%REC	1	4/28/2004 12:23:00 AM
Surr: 2-Fluorobiphenyl	84.2	40-147		%REC	1	4/28/2004 12:23:00 AM
Surr: 2-Fluorophenol	30.9	21-110		%REC	1	4/28/2004 12:23:00 AM
Surr: 4-Terphenyl-d14	83.5	39-141		%REC	1	4/28/2004 12:23:00 AM
Surr: Nitrobenzene-d5	75.8	37-140		%REC	1	4/28/2004 12:23:00 AM
Surr: Phenol-d6	20.2	11-100		%REC	1	4/28/2004 12:23:00 AM
VOLATILES BY GC/MS		**SW8260**				Analyst: **PC**
1,1,1-Trichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
2-Butanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
2-Chloroethyl vinyl ether	ND	10		µg/L	1	4/26/2004 6:51:00 PM
2-Hexanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Acetone	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Benzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromoform	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Bromomethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Carbon disulfide	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chlorobenzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloroethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloroform	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Chloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Ethylbenzene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington
Lab ID: 0404204-01

Client Sample ID: R.O. Reject Water
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
m,p-Xylene	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Methylene chloride	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Styrene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Toluene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Trichloroethene	ND	5.0		µg/L	1	4/26/2004 6:51:00 PM
Vinyl acetate	ND	10		µg/L	1	4/26/2004 6:51:00 PM
Vinyl chloride	ND	2.0		µg/L	1	4/26/2004 6:51:00 PM
Xylenes, Total	ND	15		µg/L	1	4/26/2004 6:51:00 PM
Surr: 1,2-Dichloroethane-d4	87.7	71-126		%REC	1	4/26/2004 6:51:00 PM
Surr: 4-Bromofluorobenzene	87.1	74-125		%REC	1	4/26/2004 6:51:00 PM
Surr: Dibromofluoromethane	89.0	73-126		%REC	1	4/26/2004 6:51:00 PM
Surr: Toluene-d8	102	75-125		%REC	1	4/26/2004 6:51:00 PM
CHEMICAL OXYGEN DEMAND		**E410.4**				Analyst: **MAG**
Chemical Oxygen Demand	59.6	5.00		mg/L	1	4/23/2004
PHENOLICS		**E420.2**				Analyst: **MAG**
Phenolics, Total Recoverable	ND	0.0500		mg/L	1	4/28/2004
ANIONS BY ION CHROMATOGRAPHY		**E300**				Analyst: **MG**
Chloride	1,050	25.0		mg/L	50	4/17/2004 8:28:00 PM
Fluoride	2.44	0.100		mg/L	1	4/17/2004 5:36:00 PM
Nitrogen, Nitrate (As N)	7.99	0.100		mg/L	1	4/17/2004 5:36:00 PM
Sulfate	251	10.0		mg/L	10	4/17/2004 7:59:00 PM
Surr: Dichloroacetic acid (surr)	99.4	80-120		%REC	50	4/17/2004 8:28:00 PM
Surr: Dichloroacetic acid (surr)	99.6	80-120		%REC	10	4/17/2004 7:59:00 PM
Surr: Dichloroacetic acid (surr)	100	80-120		%REC	1	4/17/2004 5:36:00 PM
ALKALINITY		**E310.1**				Analyst: **LMD**
Alkalinity, Bicarbonate (As CaCO3)	110	5.00		mg/L	1	4/28/2004
Alkalinity, Carbonate (As CaCO3)	ND	5.00		mg/L	1	4/28/2004
Alkalinity, Hydroxide (As CaCO3)	ND	5.00		mg/L	1	4/28/2004
Alkalinity, Total (As CaCO3)	110	5.00		mg/L	1	4/28/2004
CYANIDE, TOTAL		**E335.3**				Analyst: **LMD**
Cyanide	ND	0.0200		mg/L	1	4/24/2004
CONDUCTIVITY		**E120.1**				Analyst: **LMD**
Specific Conductance	3,790	1.00		µmhos/cm	1	4/20/2004
AMMONIA AS N		**E350.1**				Analyst: **MAG**
Nitrogen, Ammonia (As N)	ND	0.0625		mg/L	1.25	4/26/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

Date: *May 11, 2004*

CLIENT:	Navajo Refining Company	**Client Sample ID:**	R.O. Reject Water
Work Order:	0404204	**Collection Date:**	4/16/2004 8:00:00 AM
Project:	RO Annual-Lovington		
Lab ID:	0404204-01	**Matrix:**	WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
PH			**E150.1**			Analyst: **LMD**
pH	6.11	0.100		pH units	1	4/17/2004
TOTAL DISSOLVED SOLIDS			**E160.1**			Analyst: **QLD**
Total Dissolved Solids (Residue, Filterable)	2,990	10.0		mg/L	1	4/20/2004
TOTAL SUSPENDED SOLIDS			**E160.2**			Analyst: **QLD**
Suspended Solids (Residue, Non-Filterable)	4.00	2.00		mg/L	1	4/20/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

Date: *May 11 2004*

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

MBLK Sample ID: **PBLKW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 16:26**

Client ID: Run ID: **ECD_1_040418B** SeqNo: **459148** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	ND	0.050								
4,4'-DDE	ND	0.050								
4,4'-DDT	ND	0.050								
Aldrin	ND	0.050								
alpha-BHC	ND	0.050								
beta-BHC	ND	0.050								
Chlordane	ND	0.50								
delta-BHC	ND	0.050								
Dieldrin	ND	0.050								
Endosulfan I	ND	0.050								
Endosulfan II	ND	0.050								
Endosulfan sulfate	ND	0.050								
Endrin	ND	0.050								
Endrin aldehyde	ND	0.050								
Endrin ketone	ND	0.050								
gamma-BHC	ND	0.050								
Heptachlor	ND	0.050								
Heptachlor epoxide	ND	0.050								
Methoxychlor	ND	0.50								
Toxaphene	ND	0.50								
Surr: Decachlorobiphenyl	0.1877	0.050	0.2	0	93.9	57.3-148	0			
Surr: Tetrachloro-m-xylene	0.2172	0.050	0.2	0	109	49.2-132	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

LCS Sample ID: **PLCSW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 17:01**

Client ID: Run ID: **ECD_1_040418B** SeqNo: **459149** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4657	0.050	0.5	0	93.1	52.8-136	0			
4,4'-DDE	0.4606	0.050	0.5	0	92.1	65-138	0			
4,4'-DDT	0.4561	0.050	0.5	0	91.2	56.2-140	0			
Aldrin	0.2127	0.050	0.25	0	85.1	51.6-126	0			
alpha-BHC	0.23	0.050	0.25	0	92	53.9-126	0			
beta-BHC	0.2317	0.050	0.25	0	92.7	63.4-140	0			
delta-BHC	0.2301	0.050	0.25	0	92	44.2-137	0			
Dieldrin	0.4679	0.050	0.5	0	93.6	61.1-137	0			
Endosulfan I	0.2327	0.050	0.25	0	93.1	47-129	0			
Endosulfan II	0.4564	0.050	0.5	0	91.3	65-136	0			
Endosulfan sulfate	0.455	0.050	0.5	0	91	59.9-136	0			
Endrin	0.5284	0.050	0.5	0	106	66.5-154	0			
Endrin aldehyde	0.4654	0.050	0.5	0	93.1	67-142	0			
Endrin ketone	0.4746	0.050	0.5	0	94.9	67.2-147	0			
gamma-BHC	0.2347	0.050	0.25	0	93.9	58-132	0			
Heptachlor	0.2291	0.050	0.25	0	91.7	46.3-130	0			
Heptachlor epoxide	0.2293	0.050	0.25	0	91.7	63.5-132	0			
Methoxychlor	2.476	0.50	2.5	0	99	64.2-137	0			
Surr: Decachlorobiphenyl	0.1337	0.050	0.2	0	66.8	57.3-148	0			
Surr: Tetrachloro-m-xylene	0.1942	0.050	0.2	0	97.1	49.2-132	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8711** InstrumentID: **ECD_1**

LCSD Sample ID: **PLCSDW1-040420** Test Code: **SW8081** Units: **µg/L** Analysis Date: **04/20/04 17:36**

Client ID: Run ID: **ECD_1_040418B** SeqNo: **459150** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.4644	0.050	0.5	0	92.9	52.8-136	0.4657	0.282	30	
4,4'-DDE	0.4631	0.050	0.5	0	92.6	65-138	0.4606	0.53	30	
4,4'-DDT	0.4546	0.050	0.5	0	90.9	56.2-140	0.4561	0.323	30	
Aldrin	0.2139	0.050	0.25	0	85.6	51.6-126	0.2127	0.563	30	
alpha-BHC	0.2357	0.050	0.25	0	94.3	53.9-126	0.23	2.45	30	
beta-BHC	0.236	0.050	0.25	0	94.4	63.4-140	0.2317	1.83	30	
delta-BHC	0.2465	0.050	0.25	0	98.6	44.2-137	0.2301	6.9	30	
Dieldrin	0.4705	0.050	0.5	0	94.1	61.1-137	0.4679	0.552	30	
Endosulfan I	0.2322	0.050	0.25	0	92.9	47-129	0.2327	0.207	30	
Endosulfan II	0.4564	0.050	0.5	0	91.3	65-136	0.4564	0.00876	30	
Endosulfan sulfate	0.4589	0.050	0.5	0	91.8	59.9-136	0.455	0.853	30	
Endrin	0.5271	0.050	0.5	0	105	66.5-154	0.5284	0.246	30	
Endrin aldehyde	0.4576	0.050	0.5	0	91.5	67-142	0.4654	1.7	30	
Endrin ketone	0.4805	0.050	0.5	0	96.1	67.2-147	0.4746	1.22	30	
gamma-BHC	0.2389	0.050	0.25	0	95.6	58-132	0.2347	1.8	30	
Heptachlor	0.2419	0.050	0.25	0	96.8	46.3-130	0.2291	5.42	30	
Heptachlor epoxide	0.2278	0.050	0.25	0	91.1	63.5-132	0.2293	0.669	30	
Methoxychlor	2.434	0.50	2.5	0	97.3	64.2-137	2.476	1.73	30	
Surr: Decachlorobiphenyl	0.1661	0.050	0.2	0	83	57.3-148	0.1337	21.6	30	
Surr: Tetrachloro-m-xylene	0.1912	0.050	0.2	0	95.6	49.2-132	0.1942	1.54	30	

The following samples were analyzed in this batch: 0404204-01F

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8712** InstrumentID: **ECD_3**

MBLK Sample ID: **PBLKW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 0:38**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460650** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.50								
Aroclor 1221	ND	0.50								
Aroclor 1232	ND	0.50								
Aroclor 1242	ND	0.50								
Aroclor 1248	ND	0.50								
Aroclor 1254	ND	0.50								
Aroclor 1260	ND	0.50								
Surr: Decachlorobiphenyl	0.1987	0.050	0.2	0	99.3	54.7-129	0			
Surr: Tetrachloro-m-xylene	0.222	0.050	0.2	0	111	48-142	0			

LCS Sample ID: **PLCSW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 1:13**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460651** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3.69	0.50	5	0	73.8	58-135	0			
Aroclor 1260	3.699	0.50	5	0	74	56.8-125	0			
Surr: Decachlorobiphenyl	0.1618	0.050	0.2	0	80.9	54.7-129	0			
Surr: Tetrachloro-m-xylene	0.1851	0.050	0.2	0	92.5	48-142	0			

LCSD Sample ID: **PLCSDW2-040420** Test Code: **SW8082** Units: **µg/L** Analysis Date: **04/21/04 1:48**
Client ID: Run ID: **ECD_3_040420A** SeqNo: **460652** Prep Date: **4/20/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.035	0.50	5	0	80.7	58-135	3.69	8.94	20	
Aroclor 1260	4.074	0.50	5	0	81.5	56.8-125	3.699	9.64	20	
Surr: Decachlorobiphenyl	0.1812	0.050	0.2	0	90.6	54.7-129	0.1618	11.3	20	
Surr: Tetrachloro-m-xylene	0.216	0.050	0.2	0	108	48-142	0.1851	15.4	20	

The following samples were analyzed in this batch: 0404204-01G

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8753** InstrumentID: **Mercury**

MBLK Sample ID: **GBLKW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:11**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462206** Prep Date: **4/27/2004** DF: **1**

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

LCS Sample ID: **GLCSW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:12**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462207** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.00020	0.005	0	101	83-115	0			

LCSD Sample ID: **GLCSDW1-042704** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:22**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462208** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00505	0.00020	0.005	0	101	83-115	0.00506	0.198	20	

MS Sample ID: **0404224-01BMS** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:36**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462211** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00457	0.00020	0.005	0.000015	91.1	83-115	0			

MSD Sample ID: **0404224-01BMSD** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:38**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462212** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00454	0.00020	0.005	0.000015	90.5	83-115	0.00457	0.659	20	

DUP Sample ID: **0404224-01BDUP** Test Code: **SW7470** Units: **mg/L** Analysis Date: **04/27/04 16:27**
Client ID: Run ID: **MERCURY_040427A** SeqNo: **462210** Prep Date: **4/27/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	0.000015	0	20	

The following samples were analyzed in this batch: 0404204-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MBLK Sample ID: **MBLKW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 16:15**

Client ID: Run ID: **ICP7500_040423A** SeqNo: **461029** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	0.0006788	0.0050								J
Beryllium	ND	0.0020								
Boron	ND	0.020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Sodium	ND	0.20								
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

MBLK Sample ID: **MBLKW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:12**

Client ID: Run ID: **ICP4500_040426A** SeqNo: **461547** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cadmium	ND	0.0020								
Selenium	ND	0.0050								
Silver	ND	0.0050								

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

LCS Sample ID: **MLCSW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 16:21**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461030** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.04512	0.010	0.05	0	90.2	79-126	0			
Arsenic	0.04627	0.0050	0.05	0	92.5	80-121	0			
Barium	0.05047	0.0050	0.05	0	101	79.8-119	0			
Beryllium	0.04891	0.0020	0.05	0	97.8	78.9-120	0			
Boron	0.4804	0.020	0.5	0	96.1	80-120	0			
Calcium	5.244	0.50	5	0	105	80-121	0			
Chromium	0.04796	0.0050	0.05	0	95.9	79.3-121	0			
Cobalt	0.05133	0.0050	0.05	0	103	82-121	0			
Copper	0.04555	0.0050	0.05	0	91.1	83-121	0			
Iron	5.367	0.20	5	0	107	80-120	0			
Lead	0.04509	0.0050	0.05	0	90.2	80-118	0			
Magnesium	5.316	0.20	5	0	106	80-120	0			
Manganese	0.04485	0.0050	0.05	0	89.7	82-119	0			
Molybdenum	0.04512	0.0050	0.05	0	90.2	84.6-115	0			
Nickel	0.04943	0.0050	0.05	0	98.9	85-120	0			
Potassium	5.298	0.20	5	0	106	80-120	0			
Sodium	5.259	0.20	5	0	105	82.4-120	0			
Vanadium	0.04288	0.0050	0.05	0	85.8	82.1-119	0			
Zinc	0.04656	0.0050	0.05	0	93.1	83-118	0			

LCS Sample ID: **MLCSW1-042304** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:17**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461548** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cadmium	0.04869	0.0020	0.05	0	97.4	79.1-119	0			
Selenium	0.0469	0.0050	0.05	0	93.8	79.2-118	0			
Silver	0.04721	0.0050	0.05	0	94.4	83-117	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MS Sample ID: **0404224-01BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:44**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461045** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04389	0.0050	0.05	0	87.8	80-121	0			
Beryllium	0.042	0.0020	0.05	0	84	78.9-120	0			
Boron	0.7191	0.020	0.5	0.2598	91.9	80-120	0			
Calcium	93.06	0.50	5	93.33	-5.4	80-121	0			SEO
Chromium	0.04948	0.0050	0.05	0.006417	86.1	79.3-121	0			
Cobalt	0.04981	0.0050	0.05	0.00133	97	82-121	0			
Copper	0.0431	0.0050	0.05	0.002979	80.2	83-121	0			S
Iron	4.66	0.20	5	0.1243	90.7	80-120	0			
Lead	0.04051	0.0050	0.05	0	81	80-118	0			
Magnesium	51.14	0.20	5	49.37	35.4	80-120	0			SEO
Molybdenum	0.04417	0.0050	0.05	0	88.3	84.6-115	0			
Nickel	0.04601	0.0050	0.05	0.004771	82.5	85-120	0			S
Potassium	7.558	0.20	5	3.122	88.7	80-120	0			
Selenium	0.04085	0.0050	0.05	0	81.7	79.2-118	0			
Silver	0.04288	0.0050	0.05	0	85.8	83-117	0			
Vanadium	0.04877	0.0050	0.05	0.00121	95.1	82.1-119	0			
Zinc	0.0448	0.0050	0.05	0.005857	77.9	83-118	0			S

MS Sample ID: **0404224-01BMS** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:36**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461552** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.07028	0.010	0.05	0.0299	80.8	79-126	0			
Barium	0.1087	0.0050	0.05	0.06148	94.4	79.8-119	0			
Cadmium	0.04313	0.0020	0.05	0.00004538	86.2	79.1-119	0			
Manganese	0.2705	0.0050	0.05	0.2719	-2.8	82-119	0			SO
Sodium	ND	0.20	5	0	0	82.4-120	0			S

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

MSD Sample ID: **0404224-01BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:50**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461046** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04407	0.0050	0.05	0	88.1	80-121	0.04389	0.409	15	
Beryllium	0.04221	0.0020	0.05	0	84.4	78.9-120	0.042	0.499	15	
Boron	0.7214	0.020	0.5	0.2598	92.3	80-120	0.7191	0.319	15	
Calcium	92.75	0.50	5	93.33	-11.6	80-121	93.06	0.334	15	SEO
Chromium	0.04803	0.0050	0.05	0.006417	83.2	79.3-121	0.04948	2.97	15	
Cobalt	0.05005	0.0050	0.05	0.00133	97.4	82-121	0.04981	0.481	15	
Copper	0.04322	0.0050	0.05	0.002979	80.5	83-121	0.0431	0.278	15	S
Iron	4.766	0.20	5	0.1243	92.8	80-120	4.66	2.25	15	
Lead	0.04262	0.0050	0.05	0	85.2	80-118	0.04051	5.08	15	
Magnesium	51.22	0.20	5	49.37	37	80-120	51.14	0.156	15	SEO
Molybdenum	0.04613	0.0050	0.05	0	92.3	84.6-115	0.04417	4.34	15	
Nickel	0.04619	0.0050	0.05	0.004771	82.8	85-120	0.04601	0.39	15	S
Potassium	7.684	0.20	5	3.122	91.2	80-120	7.558	1.65	15	
Selenium	0.04272	0.0050	0.05	0	85.4	79.2-118	0.04085	4.48	15	
Silver	0.04295	0.0050	0.05	0	85.9	83-117	0.04288	0.163	15	
Vanadium	0.04793	0.0050	0.05	0.00121	93.4	82.1-119	0.04877	1.74	15	
Zinc	0.04712	0.0050	0.05	0.005857	82.5	83-118	0.0448	5.05	15	S

MSD Sample ID: **0404224-01BMSD** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:40**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461553** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.06893	0.010	0.05	0.0299	78.1	79-126	0.07028	1.94	15	S
Barium	0.1072	0.0050	0.05	0.06148	91.4	79.8-119	0.1087	1.39	15	
Cadmium	0.04234	0.0020	0.05	0.00004538	84.6	79.1-119	0.04313	1.85	15	
Manganese	0.282	0.0050	0.05	0.2719	20.2	82-119	0.2705	4.16	15	SO
Sodium	ND	0.20	5	0	0	82.4-120	0	0	15	S

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8754** InstrumentID: **ICP7500**

DUP Sample ID: **0404224-01BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/23/04 18:38**
Client ID: Run ID: **ICP7500_040423A** SeqNo: **461044** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050	0	0	0	0-0	0	0	25	
Beryllium	ND	0.0020	0	0	0	0-0	0	0	25	
Boron	0.2667	0.020	0	0	0	0-0	0.2598	2.62	25	
Calcium	91.36	0.50	0	0	0	0-0	93.33	2.13	25	
Chromium	0.00664	0.0050	0	0	0	0-0	0.006417	3.42	25	
Cobalt	0.00117	0.0050	0	0	0	0-0	0.00133	0	25	J
Copper	0.001621	0.0050	0	0	0	0-0	0.002979	0	25	J
Iron	0.05559	0.20	0	0	0	0-0	0.1243	0	25	J
Lead	ND	0.0050	0	0	0	0-0	0	0	25	
Magnesium	48.97	0.20	0	0	0	0-0	49.37	0.814	25	
Molybdenum	ND	0.0050	0	0	0	0-0	0	0	25	
Nickel	0.003749	0.0050	0	0	0	0-0	0.004771	0	25	J
Potassium	3.103	0.20	0	0	0	0-0	3.122	0.61	25	
Selenium	ND	0.0050	0	0	0	0-0	0	0	25	
Silver	ND	0.0050	0	0	0	0-0	0	0	25	
Vanadium	0.001906	0.0050	0	0	0	0-0	0.00121	0	25	J
Zinc	0.005431	0.0050	0	0	0	0-0	0.005857	7.55	25	

DUP Sample ID: **0404224-01BDUP** Test Code: **SW6020** Units: **mg/L** Analysis Date: **04/26/04 16:31**
Client ID: Run ID: **ICP4500_040426A** SeqNo: **461551** Prep Date: **4/23/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.02567	0.010	0	0	0	0-0	0.0299	15.2	25	
Barium	0.05997	0.0050	0	0	0	0-0	0.06148	2.49	25	
Cadmium	ND	0.0020	0	0	0	0-0	0.00004538	0	25	
Manganese	0.2372	0.0050	0	0	0	0-0	0.2719	13.6	25	
Sodium	ND	0.20	0	0	0	0-0	0	0	25	

The following samples were analyzed in this batch: 0404204-01B

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

MBLK Sample ID: **SBLKW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 13:26**
Client ID: Run ID: **SV-3_040420A** SeqNo: **459019** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
2-Nitroaniline	ND	10								
2-Nitrophenol	ND	10								
3-Nitroaniline	ND	10								
4-Methylphenol	ND	10								
4-Nitroaniline	ND	10								
4-Nitrophenol	ND	10								
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Benz(a)anthracene	ND	10								
Benzidine	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
Nitrobenzene	ND	10								
Pentachlorophenol	ND	10								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
1,4-Dichlorobenzene-d4	40	0								
Acenaphthene-d10	40	0								
Chrysene-d12	40	0								
Naphthalene-d8	40	0								
Perylene-d12	40	0								
Phenanthrene-d10	40	0								
Surr: 2,4,6-Tribromophenol	88.77	0	100	0	88.8	39-153	0			
Surr: 2-Fluorobiphenyl	78.31	0	100	0	78.3	40-147	0			
Surr: 2-Fluorophenol	39.53	0	100	0	39.5	21-110	0			
Surr: 4-Terphenyl-d14	90.32	0	100	0	90.3	39-141	0			
Surr: Nitrobenzene-d5	76.72	0	100	0	76.7	37-140	0			
Surr: Phenol-d6	25.07	0	100	0	25.1	11-100	0			

ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in assoc. Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
U - Analyzed for but not detected
O - Referenced analyte value is > 4 times amount spiked
P - Dual Column results percent difference > 40%
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

LCS Sample ID: **SLCSW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 13:54**

Client ID: Run ID: **SV-3_040420A** SeqNo: **459020** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	40.6	10	50	0	81.2	50-115	0			
2,4,5-Trichlorophenol	93.23	10	100	0	93.2	68-128	0			
2,4,6-Trichlorophenol	92.14	10	100	0	92.1	66-125	0			
2-Methylnaphthalene	43.58	10	50	0	87.2	47-122	0			
2-Methylphenol	73.86	10	100	0	73.9	51-115	0			
2-Nitroaniline	45.04	10	50	0	90.1	64-128	0			
2-Nitrophenol	89.08	10	100	0	89.1	60-119	0			
3-Nitroaniline	40.23	10	50	0	80.5	61-118	0			
4-Methylphenol	98.5	10	150	0	65.7	44-115	0			
4-Nitroaniline	43.3	10	50	0	86.6	61-123	0			
4-Nitrophenol	48.31	10	100	0	48.3	17-100	0			
Acenaphthene	45.76	10	50	0	91.5	68-115	0			
Acenaphthylene	45.65	10	50	0	91.3	67-116	0			
Aniline	28.21	10	50	0	56.4	40-130	0			
Anthracene	48.93	10	50	0	97.9	70-129	0			
Benz(a)anthracene	45.11	10	50	0	90.2	55-131	0			
Benzidine	11.24	10	50	0	22.5	10-115	0			
Hexachloroethane	34.76	10	50	0	69.5	46-115	0			
Indeno(1,2,3-cd)pyrene	43.24	10	50	0	86.5	42-123	0			
Isophorone	45.34	10	50	0	90.7	63-117	0			
N-Nitrosodi-n-propylamine	42.51	10	50	0	85	67-115	0			
N-Nitrosodimethylamine	20.37	10	50	0	40.7	28-115	0			
N-Nitrosodiphenylamine	50.92	10	50	0	102	72-144	0			
Naphthalene	43.38	10	50	0	86.8	52-115	0			
Nitrobenzene	43.94	10	50	0	87.9	65-115	0			
Pentachlorophenol	90.05	10	100	0	90.1	65-123	0			
Phenanthrene	47.52	10	50	0	95	69-119	0			
Phenol	36.05	10	100	0	36	16-115	0			
Pyrene	47.36	10	50	0	94.7	51-130	0			
Surr: 2,4,6-Tribromophenol	93.36	0	100	0	93.4	39-153	0			
Surr: 2-Fluorobiphenyl	83.05	0	100	0	83.1	40-147	0			
Surr: 2-Fluorophenol	49.92	0	100	0	49.9	21-110	0			
Surr: 4-Terphenyl-d14	88.63	0	100	0	88.6	39-141	0			
Surr: Nitrobenzene-d5	82.09	0	100	0	82.1	37-140	0			
Surr: Phenol-d6	33.05	0	100	0	33.1	11-100	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **8693** InstrumentID: **SV-3**

LCSD Sample ID: **SLCSDW1-040419** Test Code: **SW8270** Units: **µg/L** Analysis Date: **04/20/04 14:22**

Client ID: Run ID: **SV-3_040420A** SeqNo: **459021** Prep Date: **4/19/2004** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	39.79	10	50	0	79.6	50-115	40.6	2.02	30	
2,4,5-Trichlorophenol	94.78	10	100	0	94.8	68-128	93.23	1.65	30	
2,4,6-Trichlorophenol	91.71	10	100	0	91.7	66-125	92.14	0.466	30	
2-Methylnaphthalene	42.71	10	50	0	85.4	47-122	43.58	2.02	30	
2-Methylphenol	72.91	10	100	0	72.9	51-115	73.86	1.29	30	
2-Nitroaniline	45.85	10	50	0	91.7	64-128	45.04	1.79	30	
2-Nitrophenol	87.85	10	100	0	87.9	60-119	89.08	1.38	30	
3-Nitroaniline	42.4	10	50	0	84.8	61-118	40.23	5.26	30	
4-Methylphenol	96.55	10	150	0	64.4	44-115	98.5	2	30	
4-Nitroaniline	45.04	10	50	0	90.1	61-123	43.3	3.94	30	
4-Nitrophenol	46.98	10	100	0	47	17-100	48.31	2.79	30	
Acenaphthene	45.69	10	50	0	91.4	68-115	45.76	0.143	30	
Acenaphthylene	46.05	10	50	0	92.1	67-116	45.65	0.871	30	
Aniline	31.26	10	50	0	62.5	40-130	28.21	10.2	30	
Anthracene	49.18	10	50	0	98.4	70-129	48.93	0.515	30	
Benz(a)anthracene	46.68	10	50	0	93.4	55-131	45.11	3.43	30	
Benzidine	14.74	10	50	0	29.5	10-115	11.24	26.9	30	
Hexachloroethane	34.94	10	50	0	69.9	46-115	34.76	0.536	30	
Indeno(1,2,3-cd)pyrene	42.12	10	50	0	84.2	42-123	43.24	2.63	30	
Isophorone	45.59	10	50	0	91.2	63-117	45.34	0.551	30	
N-Nitrosodi-n-propylamine	42.8	10	50	0	85.6	67-115	42.51	0.683	30	
N-Nitrosodimethylamine	21.4	10	50	0	42.8	28-115	20.37	4.93	30	
N-Nitrosodiphenylamine	52.47	10	50	0	105	72-144	50.92	2.99	30	
Naphthalene	43.24	10	50	0	86.5	52-115	43.38	0.325	30	
Nitrobenzene	44.24	10	50	0	88.5	65-115	43.94	0.67	30	
Pentachlorophenol	92.67	10	100	0	92.7	65-123	90.05	2.86	30	
Phenanthrene	47.49	10	50	0	95	69-119	47.52	0.0615	30	
Phenol	35.19	10	100	0	35.2	16-115	36.05	2.42	30	
Pyrene	48.2	10	50	0	96.4	51-130	47.36	1.76	30	
Surr: 2,4,6-Tribromophenol	97.18	0	100	0	97.2	39-153	93.36	4.01	30	
Surr: 2-Fluorobiphenyl	82.79	0	100	0	82.8	40-147	83.05	0.309	30	
Surr: 2-Fluorophenol	48.74	0	100	0	48.7	21-110	49.92	2.38	30	
Surr: 4-Terphenyl-d14	91.01	0	100	0	91	39-141	88.63	2.65	30	
Surr: Nitrobenzene-d5	81.51	0	100	0	81.5	37-140	82.09	0.704	30	
Surr: Phenol-d6	32.74	0	100	0	32.7	11-100	33.05	0.962	30	

The following samples were analyzed in this batch: 0404204-01E

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MBLK Sample ID: **VBLKW-0426** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 16:10**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461696** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	43.15	5.0	50	0	86.3	71-126	0			
Surr: 4-Bromofluorobenzene	41.57	5.0	50	0	83.1	74-125	0			
Surr: Dibromofluoromethane	44.88	5.0	50	0	89.8	73-126	0			
Surr: Toluene-d8	48.66	5.0	50	0	97.3	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

LCS Sample ID: **VLCSW-0426** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 15:43**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461695** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	49.86	5.0	50	0	99.7	75.2-120	0			
1,1,2,2-Tetrachloroethane	50.86	5.0	50	0	102	72.4-121	0			
1,1,2-Trichloroethane	52.15	5.0	50	0	104	80-120	0			
1,1-Dichloroethane	49.93	5.0	50	0	99.9	76.9-120	0			
1,1-Dichloroethene	49.39	5.0	50	0	98.8	72.6-123	0			
1,2-Dichloroethane	50.49	5.0	50	0	101	80-120	0			
2-Butanone	99.63	10	100	0	99.6	69-131	0			
2-Chloroethyl vinyl ether	99.8	10	100	0	99.8	60-135	0			
2-Hexanone	97.97	10	100	0	98	55.6-126	0			
4-Methyl-2-pentanone	97.33	10	100	0	97.3	67.4-121	0			
Acetone	99.72	10	100	0	99.7	64.4-140	0			
Benzene	54.77	5.0	50	0	110	80-120	0			
Bromodichloromethane	51.45	5.0	50	0	103	80-120	0			
Bromoform	52.72	5.0	50	0	105	77.9-121	0			
Bromomethane	52.18	5.0	50	0	104	63.3-137	0			
Carbon disulfide	97.47	10	100	0	97.5	74.1-123	0			
Carbon tetrachloride	49.18	5.0	50	0	98.4	74.7-120	0			
Chlorobenzene	52.56	5.0	50	0	105	80-120	0			
Chloroethane	49.06	5.0	50	0	98.1	74.7-126	0			
Chloroform	49.98	5.0	50	0	100	80-120	0			
Chloromethane	52.35	5.0	50	0	105	64.5-132	0			
cis-1,3-Dichloropropene	51.16	5.0	50	0	102	80-120	0			
Dibromochloromethane	52.1	5.0	50	0	104	80-120	0			
Ethylbenzene	51.56	5.0	50	0	103	80-120	0			
m,p-Xylene	109	10	100	0	109	80-120	0			
Methylene chloride	49.11	10	50	0	98.2	76.2-120	0			
Styrene	52.36	5.0	50	0	105	80-120	0			
Tetrachloroethene	52.55	5.0	50	0	105	68.5-130	0			
Toluene	56.67	5.0	50	0	113	80-120	0			
trans-1,3-Dichloropropene	52.02	5.0	50	0	104	80-120	0			
Trichloroethene	53.22	5.0	50	0	106	78.9-120	0			
Vinyl acetate	103.3	10	100	0	103	62.4-133	0			
Vinyl chloride	52.37	2.0	50	0	105	72.7-128	0			
Xylenes, Total	161.3	15	150	0	108	80-120	0			
Surr: 1,2-Dichloroethane-d4	44.07	5.0	50	0	88.1	71-126	0			
Surr: 4-Bromofluorobenzene	48.33	5.0	50	0	96.7	74-125	0			
Surr: Dibromofluoromethane	46.93	5.0	50	0	93.9	73-126	0			
Surr: Toluene-d8	51.73	5.0	50	0	103	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MS Sample ID: **0404140-01AMS** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 17:04**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461698** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	46.99	5.0	50	0	94	75.2-120	0			
1,1,2,2-Tetrachloroethane	55.71	5.0	50	0	111	72.4-121	0			
1,1,2-Trichloroethane	56.18	5.0	50	0	112	80-120	0			
1,1-Dichloroethane	50.64	5.0	50	0	101	76.9-120	0			
1,1-Dichloroethene	45.53	5.0	50	0	91.1	72.6-123	0			
1,2-Dichloroethane	56.23	5.0	50	0	112	80-120	0			
2-Butanone	113.1	10	100	0	113	69-131	0			
2-Chloroethyl vinyl ether	29.77	10	100	0	29.8	60-135	0			S
2-Hexanone	103.6	10	100	0	104	55.6-126	0			
4-Methyl-2-pentanone	107.3	10	100	0	107	67.4-121	0			
Acetone	122.7	10	100	0	123	64.4-140	0			
Benzene	68.48	5.0	50	13.29	110	80-120	0			
Bromodichloromethane	54.16	5.0	50	0	108	80-120	0			
Bromoform	57.02	5.0	50	0	114	77.9-121	0			
Bromomethane	48.3	5.0	50	0	96.6	63.3-137	0			
Carbon disulfide	92.16	10	100	0	92.2	74.1-123	0			
Carbon tetrachloride	44.33	5.0	50	0	88.7	74.7-120	0			
Chlorobenzene	52.92	5.0	50	0	106	80-120	0			
Chloroethane	49.87	5.0	50	0	99.7	74.7-126	0			
Chloroform	52.4	5.0	50	0	105	80-120	0			
Chloromethane	40.76	5.0	50	0	81.5	64.5-132	0			
cis-1,3-Dichloropropene	53.59	5.0	50	0	107	80-120	0			
Dibromochloromethane	56.69	5.0	50	0	113	80-120	0			
Ethylbenzene	53.81	5.0	50	5.363	96.9	80-120	0			
m,p-Xylene	108	10	100	0	108	80-120	0			
Methylene chloride	51.99	10	50	0	104	76.2-120	0			
Styrene	53.04	5.0	50	0	106	80-120	0			
Tetrachloroethene	47.56	5.0	50	0	95.1	68.5-130	0			
Toluene	57.7	5.0	50	0	115	80-120	0			
trans-1,3-Dichloropropene	54.22	5.0	50	0	108	80-120	0			
Trichloroethene	51.82	5.0	50	0	104	78.9-120	0			
Vinyl acetate	115.6	10	100	0	116	62.4-133	0			
Vinyl chloride	46.65	2.0	50	0	93.3	72.7-128	0			
Xylenes, Total	159.4	15	150	0	106	80-120	0			
Surr: 1,2-Dichloroethane-d4	45.28	5.0	50	0	90.6	71-126	0			
Surr: 4-Bromofluorobenzene	46.72	5.0	50	0	93.4	74-125	0			
Surr: Dibromofluoromethane	45.67	5.0	50	0	91.3	73-126	0			
Surr: Toluene-d8	49.6	5.0	50	0	99.2	75-125	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20118** InstrumentID: **VOA_I**

MSD Sample ID: **0404140-01AMSD** Test Code: **SW8260** Units: **µg/L** Analysis Date: **04/26/04 17:31**

Client ID: Run ID: **VOA_I_040426A** SeqNo: **461699** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.61	5.0	50	0	95.2	75.2-120	46.99	1.3	20	
1,1,2,2-Tetrachloroethane	58.66	5.0	50	0	117	72.4-121	55.71	5.15	20	
1,1,2-Trichloroethane	57.07	5.0	50	0	114	80-120	56.18	1.57	20	
1,1-Dichloroethane	52.15	5.0	50	0	104	76.9-120	50.64	2.93	20	
1,1-Dichloroethene	47.56	5.0	50	0	95.1	72.6-123	45.53	4.37	20	
1,2-Dichloroethane	56.12	5.0	50	0	112	80-120	56.23	0.194	20	
2-Butanone	123.6	10	100	0	124	69-131	113.1	8.82	20	
2-Chloroethyl vinyl ether	23.17	10	100	0	23.2	60-135	29.77	25	20	SR
2-Hexanone	117.7	10	100	0	118	55.6-126	103.6	12.7	20	
4-Methyl-2-pentanone	113.2	10	100	0	113	67.4-121	107.3	5.34	20	
Acetone	121	10	100	0	121	64.4-140	122.7	1.35	20	
Benzene	76.21	5.0	50	13.29	126	80-120	68.48	10.7	20	S
Bromodichloromethane	55.67	5.0	50	0	111	80-120	54.16	2.76	20	
Bromoform	58	5.0	50	0	116	77.9-121	57.02	1.7	20	
Bromomethane	52.67	5.0	50	0	105	63.3-137	48.3	8.66	20	
Carbon disulfide	97.42	10	100	0	97.4	74.1-123	92.16	5.55	20	
Carbon tetrachloride	48.19	5.0	50	0	96.4	74.7-120	44.33	8.33	20	
Chlorobenzene	54.6	5.0	50	0	109	80-120	52.92	3.12	20	
Chloroethane	48.51	5.0	50	0	97	74.7-126	49.87	2.77	20	
Chloroform	51.44	5.0	50	0	103	80-120	52.4	1.86	20	
Chloromethane	39.8	5.0	50	0	79.6	64.5-132	40.76	2.39	20	
cis-1,3-Dichloropropene	54.6	5.0	50	0	109	80-120	53.59	1.87	20	
Dibromochloromethane	57.63	5.0	50	0	115	80-120	56.69	1.66	20	
Ethylbenzene	59.41	5.0	50	5.363	108	80-120	53.81	9.89	20	
m,p-Xylene	113.6	10	100	0	114	80-120	108	5.11	20	
Methylene chloride	51.27	10	50	0	103	76.2-120	51.99	1.39	20	
Styrene	53.78	5.0	50	0	108	80-120	53.04	1.38	20	
Tetrachloroethene	51.92	5.0	50	0	104	68.5-130	47.56	8.76	20	
Toluene	58.21	5.0	50	0	116	80-120	57.7	0.887	20	
trans-1,3-Dichloropropene	55.32	5.0	50	0	111	80-120	54.22	2.02	20	
Trichloroethene	54.68	5.0	50	0	109	78.9-120	51.82	5.36	20	
Vinyl acetate	122.1	10	100	0	122	62.4-133	115.6	5.48	20	
Vinyl chloride	49.69	2.0	50	0	99.4	72.7-128	46.65	6.32	20	
Xylenes, Total	166.7	15	150	0	111	80-120	159.4	4.5	20	
Surr: 1,2-Dichloroethane-d4	44.05	5.0	50	0	88.1	71-126	45.28	2.75	20	
Surr: 4-Bromofluorobenzene	46.87	5.0	50	0	93.7	74-125	46.72	0.319	20	
Surr: Dibromofluoromethane	44.77	5.0	50	0	89.5	73-126	45.67	1.99	20	
Surr: Toluene-d8	48.96	5.0	50	0	97.9	75-125	49.6	1.31	20	

The following samples were analyzed in this batch: 0404204-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19955** InstrumentID: **Wet Chemistry**

LCS Sample ID: **WLCSW1-041704** Test Code: **E150.1** Units: **pH units** Analysis Date: **04/17/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **457306** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	5.98	0.10	6	0	99.7	85-115	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E150.1** Units: **pH units** Analysis Date: **04/17/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **457308** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.12	0.10	0	0	0	0-0	6.11	0.164	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19973** InstrumentID: **IC201**

MBLK Sample ID: **WBLKW1-041704** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 16:11**
Client ID: Run ID: **IC201_040417B** SeqNo: **457720** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	1.0								
Surr: Dichloroacetic acid (surr)	4.57	0.10	5	0	91.4	80-120	0			

LCS Sample ID: **WLCSW1-041704** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 16:39**
Client ID: Run ID: **IC201_040417B** SeqNo: **457721** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.03	0.50	10	0	90.3	80-120	0			
Fluoride	1.83	0.10	2	0	91.5	80-120	0			
Nitrogen, Nitrate (As N)	1.86	0.10	2	0	93	80-120	0			
Sulfate	9.56	1.0	10	0	95.6	80-120	0			
Surr: Dichloroacetic acid (surr)	5	0.10	5	0	100	80-120	0			

LCSD Sample ID: **WLCSDW1-04170** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 17:08**
Client ID: Run ID: **IC201_040417B** SeqNo: **457722** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.03	0.50	10	0	90.3	80-120	9.03	0	20	
Fluoride	1.84	0.10	2	0	92	80-120	1.83	0.545	20	
Nitrogen, Nitrate (As N)	1.85	0.10	2	0	92.5	80-120	1.86	0.539	20	
Sulfate	9.56	1.0	10	0	95.6	80-120	9.56	0	20	
Surr: Dichloroacetic acid (surr)	5.13	0.10	5	0	103	80-120	5	2.57	20	

MS Sample ID: **0404204-01CMS** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 18:33**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457725** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1306	0.50	10	1316	-95.2	75-125	0			SEO
Fluoride	4.31	0.10	2	2.44	93.5	75-125	0			
Nitrogen, Nitrate (As N)	10.08	0.10	2	7.99	104	75-125	0			E
Sulfate	332.6	1.0	10	326.5	61.4	75-125	0			SEO
Surr: Dichloroacetic acid (surr)	4.91	0.10	5	0	98.2	80-120	0			

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R19973** InstrumentID: **IC201**

MSD Sample ID: **0404204-01CMSD** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 19:02**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457726** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1305	0.50	10	1316	-108	75-125	1306	0.0996	20	SEO
Fluoride	4.38	0.10	2	2.44	97	75-125	4.31	1.61	20	
Nitrogen, Nitrate (As N)	10.08	0.10	2	7.99	104	75-125	10.08	0	20	E
Sulfate	332.4	1.0	10	326.5	59.4	75-125	332.6	0.0601	20	SEO
Surr: Dichloroacetic acid (surr)	4.29	0.10	5	0	85.8	80-120	4.91	13.5	20	

DUP Sample ID: **0404204-01CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 18:05**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457724** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1316	0.50	0	0	0	0-0	1316	0.0327	20	E
Fluoride	2.44	0.10	0	0	0	0-0	2.44	0	20	
Nitrogen, Nitrate (As N)	7.99	0.10	0	0	0	0-0	7.99	0	20	
Sulfate	326.1	1.0	0	0	0	0-0	326.5	0.104	20	E
Surr: Dichloroacetic acid (surr)	4.86	0.10	5	0	97.2	80-120	5.02	3.24	20	

DUP Sample ID: **0404204-01CDUP** Test Code: **E300** Units: **mg/L** Analysis Date: **04/17/04 20:56**
Client ID: **R.O. Reject Water** Run ID: **IC201_040417B** SeqNo: **457729** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1044	25	0	0	0	0-0	1046	0.144	20	
Fluoride	ND	5.0	0	0	0	0-0	0	0	20	
Nitrogen, Nitrate (As N)	14	5.0	0	0	0	0-0	14.5	3.51	20	
Sulfate	264	50	0	0	0	0-0	268	1.5	20	
Surr: Dichloroacetic acid (surr)	246.5	5.0	250	0	98.6	80-120	248.5	0.808	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20006** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458672** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	ND	1.0								

LCS Sample ID: **WLCSW1-042004** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458673** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	1410	1.0	1409	0	100	80-120	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E120.1** Units: **µmhos/cm** Analysis Date: **04/20/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **458675** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductance	3760	1.0	0	0	0	0-0	3790	0.795	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20007** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458676** Prep Date: DF: **1**

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

LCS Sample ID: **WLCW1-042004** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458677** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	92	2.0	100	0	92	71-114	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E160.2** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **458682** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Suspended Solids (Residue, Non-Fi	4	2.0	0	0	0	0-0	4	0	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20016** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBW1-042004** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458968** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	ND	10								

LCS Sample ID: **WLCSW1-042004** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458969** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	888	10	1000	0	88.8	80-120	0			

DUP Sample ID: **0404179-01JDUP** Test Code: **E160.1** Units: **mg/L** Analysis Date: **04/20/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **458978** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	6930	10	0	0	0	0-0	6928	0.0289	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20095** InstrumentID: **UV-2101PC**

MBLK Sample ID: **WMBW1-042404** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461007** Prep Date: DF: **1**

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

LCS Sample ID: **WLCSW1-042404** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461008** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2065	0.020	0.2	0	103	80-120	0			

MS Sample ID: **0404261-21FMS** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461023** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2067	0.020	0.2	0.0006	103	75-125	0			

MSD Sample ID: **0404261-21FMSD** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461024** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.2022	0.020	0.2	0.0006	101	75-125	0.2067	2.2	25	

DUP Sample ID: **0404261-21FDUP** Test Code: **E335.3** Units: **mg/L** Analysis Date: **04/24/04 0:00**
Client ID: Run ID: **UV-2101PC_040424A** SeqNo: **461026** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	ND	0.020	0	0	0	0-0	0.0006	0	20	

The following samples were analyzed in this batch: 0404204-01D

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: Navajo Refining Company
Work Order: 0404204
Project: RO Annual-Lovington

QC BATCH REPORT

Batch ID: **R20161** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WBLKW1-042804** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **462861** Prep Date: DF: **1**

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

LCS Sample ID: **WLCSW1-042804** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: Run ID: **WET CHEMISTRY_0404** SeqNo: **462862** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1000	5.0	1000	0	100	80-120	0			

DUP Sample ID: **0404204-01CDUP** Test Code: **E310.1** Units: **mg/L** Analysis Date: **04/28/04 0:00**
Client ID: **R.O. Reject Water** Run ID: **WET CHEMISTRY_0404** SeqNo: **462864** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	110	5.0	0	0	0	0-0	110	0	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	110	5.0	0	0	0	0-0	110	0	20	

The following samples were analyzed in this batch: 0404204-01C

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

e-Lab, Inc.
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 2

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

e-Lab Project Manager:

e-Lab Work Order #: 1404204

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	RO Annual	A	Cyanide, Total
Work Order		Project Number	LOVINGTON R.O.	B	Phenolics
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	pH
Send Report To	Charlie Plymale	Invoice Attn	Charlie Plymale	D	Solids: TDS TSS
Address	P.O. Box 159	Address	P.O. Box 159	E	Radium 226+228
				F	Uranium
City/State/Zip	Artesia, New Mexico 88211	City/State/Zip	Artesia, New Mexico 88211	G	~~Fecal Coliform~~
Phone	(505) 748-3311	Phone	(505) 748-3311	H	Residual Chlorine
Fax	(505) 746-5421	Fax	(505) 746-5421	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	R.O. Reject Water	4-16-04	8:00	Water	Yes	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Steve H Terry Steve H Terry

Shipment Method

Required Turnaround Time: (Check Box) ☐ STD 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Steve H Terry — Date: 4-16-04 — Time: 8:00

Relinquished by: — Date: — Time:

Received by:

Received by (Laboratory): 4/17/04 08:45 am

Checked by (Laboratory):

Logged by (Laboratory): — Date: — Time:

Notes:

e-lab Cooler ID | Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level I Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other _____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

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

e-Lab
QUALITY • INTEGRITY • SERVICE

☑ e-Lab, Inc.
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

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

Page 1 of 1

e-Lab Project Manager: | e-Lab Work Order #: 404204

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	RO Annual	A	Tot. Metals WACC + Cations
Work Order		Project Number	LOVINGTON R.O.	B	PCBs 8082
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	Pesticides 8081
Send Report To	Charlie Plymale	Invoice Attn	Charlie Plymale	D	Semivolatiles Other 8270
Address	P.O. Box 159	Address	P.O. Box 159	E	Volatiles Other 8260
				F	Anions: Cl, NO3, F, SO4, Conductivity
City/State/Zip	Artesia, New Mexico 88211	City/State/Zip	Artesia, New Mexico 88211	G	Alkalinity
Phone	(505) 748-3311	Phone	(505) 748-3311	H	Ammonia
Fax	(505) 746-5421	Fax	(505) 746-5421	I	BOD
e-Mail Address		e-Mail Address		J	COD

No.	Sample Description	Date	Time	Matrix	Pres.	#Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	R.O. Reject Water	4-16-04	9:00	Water	Yes	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Steve Henry Steve Henry

Shipment Method

Required Turnaround Time: (Check Box) ☐ STD 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Steve Henry	Date: 4-16-04	Time: 9:00 Am	Received by:	Notes:
Relinquished by:	Date:	Time:	Received by (Laboratory): 4/17/04 08:45a.m.	e-lab Cooler ID: / Cooler Temp:
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to e-Lab, Inc.
2. Unless otherwise agreed in a formal contract, services provided by e-Lab, Inc. are expressly limited to the terms and conditions [illegible]

e-Lab, Inc.

Sample Receipt Checklist

Client Name NAVAJO REFINING | Date/Time Received: 4/17/2004 8:45:00 AM

Work Order Number 0404204 | Received by: RNG

Checklist completed by [signature] 4/17/04 (Signature / Date) | Reviewed by [initials] 4/19/04 (Initials / Date)

Matrix: W | Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c, 2.4c	004	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐

Adjusted? _____ Checked by _____

Login Notes:

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted NAVAJO Date contacted: 4/19/04 Person contacted Steve Terry / Darrell Moore

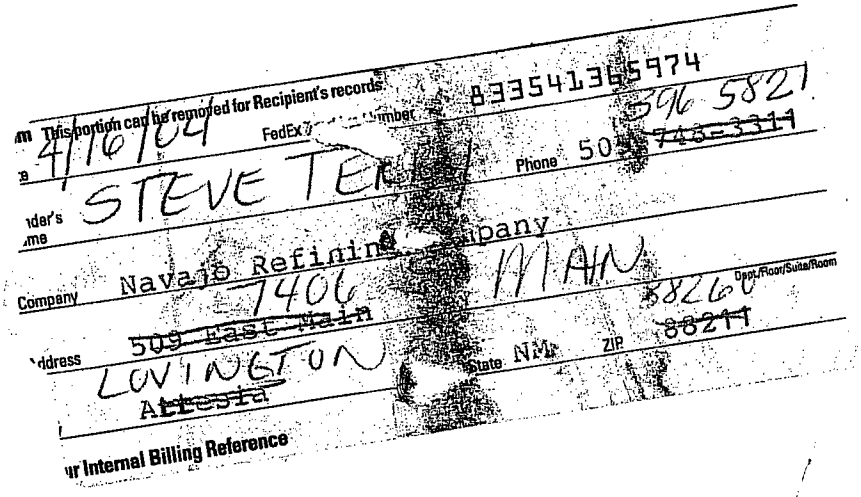
Contacted by: Jeff Croston Regarding: 2 Sample RO Reject Water Exceeding Hold Times For BOD / Residual Chlorine

Comments:

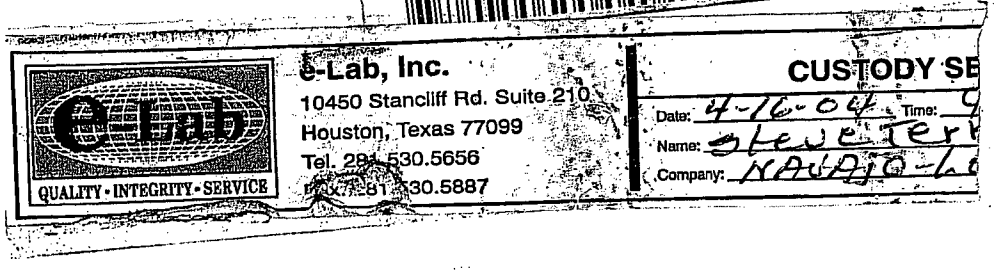
Talked to Darrell and informed him that samples had ~~were~~ exceed their hold times.

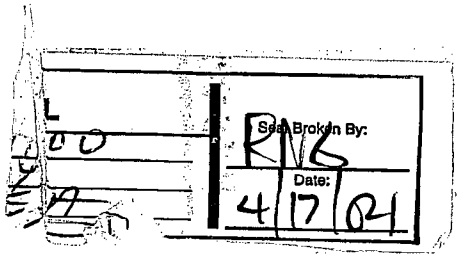
Corrective Action

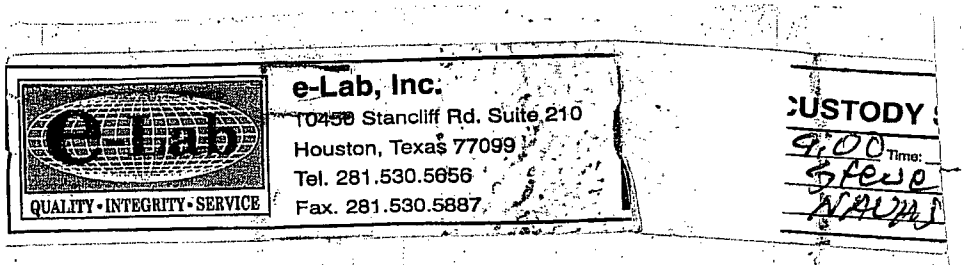
R4042204

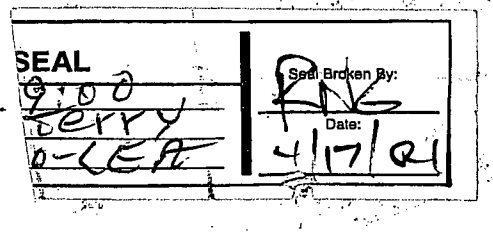

This portion can be removed for Recipient's records
8335413659 74
4/16/04
FedEx
STEVE TER
Phone 50
5827
Navajo Refining
Company
1406
509 East Main
LOVINGTON
State NM
ZIP 88260
Dept/Room/Suite/Room
Internal Billing Reference


emp: 421764 16APR04
PRIORITY SATURDAY
FedEx.
Master 8335 4136 5974 FORM 0215
0002/0002
MPS#:8343 3244 1119 FORM 0260
IAH
77099 -TX-US
X0 JCQA


e-Lab, Inc.
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
Tel. 281.530.5656
Fax. 281.530.5887
QUALITY • INTEGRITY • SERVICE
CUSTODY SE
Date: 4-16-04 Time:
Name: Steve Terr
Company: NAVAJO-Le


Seal Broken By:
RNG
Date:
4 17 04


e-Lab, Inc.
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
Tel. 281.530.5656
Fax. 281.530.5887
QUALITY • INTEGRITY • SERVICE
CUSTODY
9:00 Time:
Steve
NAVAJ


SEAL
9:00
Seal Broken By:
RNG
Date:
4 17 04

e-Lab, Inc

Date: *April 28, 2004*

CLIENT: e-Lab, Inc
Project: 0404204
Work Order: **0404366**

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
0404366-01	0404204-01I	Water		4/16/2004 08:00	4/23/2004 10:30	☐
0404366-02	0404204-01J	Water		4/16/2004 08:00	4/23/2004 10:30	☐
0404366-03	0404204-01N	Water		4/16/2004 08:00	4/23/2004 10:30	☐

e-Lab, Inc

Date: *April 28, 2004*

CLIENT: e-Lab, Inc
Project: 0404204
Work Order: 0404366

Lab ID: 0404366-01A
Client Sample ID: 0404204-01I
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
CHEMICAL OXYGEN DEMAND		**EPA 410.4**				Analyst: **JDA**
Chemical Oxygen Demand	59.6	5.00		mg/L	1	4/23/2004

Lab ID: 0404366-02A
Client Sample ID: 0404204-01J
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
NITROGEN, AMMONIA		**EPA 350.1**				Analyst: **JDA**
Nitrogen, Ammonia	ND	0.0625		mg/L	1.25	4/26/2004

Lab ID: 0404366-03A
Client Sample ID: 0404204-01N
Collection Date: 4/16/2004 8:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		**EPA 420.1**				Analyst: **KZ**
Phenolics, Total	ND	0.0500		mg/L	1	4/28/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

Date: *Apr 28 2004*

QC BATCH REPORT

Batch ID: **R20695** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLKW1-042304** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302307** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	5.0								

LCS Sample ID: **WLCSW1-042304** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302308** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	629.9	5.0	600	0	105	75-125	0			

LCSD Sample ID: **WLCSDW1-04230** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302317** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	629.9	5.0	600	0	105	75-125	629.9	0	20	

MS Sample ID: **0404369-03A MS** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302318** Prep Date: DF: **1.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	1869	7.5	600	1362	84.5	70-130	0			

MSD Sample ID: **0404369-03A MSD** Test Code: **EPA 410.4** Units: **mg/L** Analysis Date **04/23/04 0:00**
Client ID: Run ID: **WETCHEM_040423N** SeqNo: **302319** Prep Date: DF: **1.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	1920	7.5	600	1362	93	70-130	1869	2.69	20	

The following samples were analyzed in this batch: 0404366-01A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

QC BATCH REPORT

Batch ID: **R20712** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLKW1-042604** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302527** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	ND	0.050								

LCS Sample ID: **WLCSW1-042604** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302528** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.2888	0.050	0.3	0	96.3	80-120		0		

LCSD Sample ID: **WLCSDW1-04260** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: Run ID: **WETCHEM_040426C** SeqNo: **302555** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.2888	0.050	0.3	0	96.3	80-120	0.2888	0	20	

MS Sample ID: **0404366-02A MS** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: **0404204-01J** Run ID: **WETCHEM_040426C** SeqNo: **302556** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.7032	0.12	0.6	0.04888	109	75-125		0		

MSD Sample ID: **0404366-02A MSD** Test Code: **EPA 350.1** Units: **mg/L** Analysis Date **04/26/04 0:00**
Client ID: **0404204-01J** Run ID: **WETCHEM_040426C** SeqNo: **302557** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia	0.7032	0.12	0.6	0.04888	109	75-125	0.7032	0	20	

The following samples were analyzed in this batch: 0404366-02A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

CLIENT: e-Lab, Inc
Work Order: 0404366
Project: 0404204

QC BATCH REPORT

Batch ID: **R20756** InstrumentID: **WETCHEM**

MBLK Sample ID: **WBLK** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303177** Prep Date: DF: **1**

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

LCS Sample ID: **WLCS** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303178** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.2123	0.050	0.2	0	106	80-120	0			

LCSD Sample ID: **WLCSD** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: Run ID: **WETCHEM_040428E** SeqNo: **303182** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.2066	0.050	0.2	0	103	80-120	0.2123	2.72	20	

MS Sample ID: **0404366-03A MS** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: **0404204-01N** Run ID: **WETCHEM_040428E** SeqNo: **303180** Prep Date: DF: **2.5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.4882	0.12	0.5	0.01355	94.9	75-125	0			

MSD Sample ID: **0404366-03A MSD** Test Code: **EPA 420.1** Units: **mg/L** Analysis Date **04/28/04 0:00**
Client ID: **0404204-01N** Run ID: **WETCHEM_040428E** SeqNo: **303181** Prep Date: DF: **3.125**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.6635	0.16	0.625	0.01355	104	75-125	0.4882	30.4	20	R

The following samples were analyzed in this batch: 0404366-03A

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
O - Referenced analyte value is > 4 times amount spiked
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
P - Dual Column results percent difference > 40%
B - Analyte detected in assoc. Method Blank
U - Analyzed for but not detected
E - Value above quantitation range

04043646

e-Lab
ANALYTICAL SERVICES

Subcontractor:
[illegible]
[illegible]
[illegible]

TEL: (615) 369-6074
FAX: (615) 369-6185
Acct #:

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: Apr 12, 2004
COC ID: 1501
Due Date: 4/21/2004

Customer Information		Project Information		Parameter/Method Request for Analysis
Purchase Order	2100040	Project Name	0404204	A Ammonia as N (E350.1)
Work Order		Project Number		B Chemical Oxygen Demand (E410.4)
Company Name	e-Lab, Inc	Bill To Company	e-Lab, Inc	C Phenolics (E420.2)
Send Report To	Jeffrey T. Crandall	Inv Attn	Accounts Payable	D
Address	10450 Stancliff Rd, Suite 210	Address	10450 Stancliff Rd, Suite 210	E
				F
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip	Houston, Texas 77099-4338	G
Phone	(281) 530-5656	Phone	(281) 530-5656	H
Fax	(281) 530-5887	Fax	(281) 530-5887	I
eMail Address				J

	Sample ID	Matrix	Collection Date	Bottle	A	B	C	D	E	F	G	H	I	J
1	0404204-01I (R.O. Reject Water)	Water	4/15/2004 0:00	(1) 250PH2SO4		X								
2	0404204-01J (R.O. Reject Water)	Water	4/15/2004 0:00	(1) 500PH2SO4	X									
3	0404204-01K (R.O. Reject Water)	Water	4/15/2004 0:00	(2) 1LAMGH2SO4			X							

received 4/20/04 –
0404204-01M (2) (HNO3)
-01L (1) (unp)

* samples received 4/23/04 1030

Comments:

Relinquished by: [signature] Date/Time: 4/19/04 [illegible] Received by: [signature] Date/Time: 4/20/04 1000 Cooler IDs: Report QC Level: Std

Relinquished by: Date/Time: Received by: Date/Time:

e-Lab, Inc

Sample Receipt Checklist

Client Name: EXAR-HOU | Date/Time Received: 4/23/2004 10:30:00 AM

Work Order Number: 0404366 | Received by: WJC

Checklist completed by: [signature] 4/23/04 (Signature / Date) | Reviewed by: [signature] 4/23/04 (initials / Date)

Matrix: | Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shipping container/cooler?	Yes X	No	Not Present ✓ N/A
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
Chain of custody present?	Yes ✓	No	
Chain of custody signed when relinquished and received?	Yes ✓	No	
Chain of custody agrees with sample labels?	Yes ✓	No	
Samples in proper container/bottle?	Yes ✓	No	
Sample containers intact?	Yes ✓	No	

ERROR: ioerror
OFFENDING COMMAND: flushfile

STACK:

-filestream-
-filestream-
-filestream-
-filestream-
-savelevel-

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

March 30, 1998

Mark Ashley
Geologist
Environmental Bureau
Oil Conservation Division
2040 S. Pacheco St.
Santa Fe, NM 87505-5472

RE: HYDROTEST WATER FROM TK 1201 B LEA REFINING CO., LOVINGTON, NM

Dear Mark,

Lea Refining at Lovington, NM recently repaired one of the crude storage tanks that was damaged in a fire during the summer of 1997. We took this opportunity to not only repair the tank, but to clean the tank as well. The tank was then filled with 120,000 bbls. of fresh hydrotest water. The analysis of this water is included for your perusal.

As you and I have discussed, Navajo would like to release this water in an area northwest of the refinery that is owned by the city of Lovington. This area is used to graze cattle and is covered by grass, weeds, and mesquite. Lovington's City Manager, Bob Carter, has been approached about this proposal and has given it his approval. This stream of water would be piped to the location using fast line. As always, we will take care to insure that there is no ponding of this water.

If there are any questions concerning this matter, please call me at 505-748-3311. After looking over the analysis, if you could give us verbal approval to start releasing the water, we would greatly appreciate it. Thank you for your time in this matter.

Sincerely,

NAVAJO REFINING CO.

Darrell Moore

Darrell Moore
Env. Mgr. for Water and Waste

Encl.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

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

March 27, 1998
Receiving Date: 03/19/98
Sample Type: Water
Project No: TK 1201B
Project Location: Lovington, NM

Prep Date: 03/23/98
Analysis Date: 03/26/98
Sampling Date: 03/17/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T93939	TK 1201 B	3.3	14	127	75
ICV		53	47	47	51
CCV		53	49	49	52
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		0	0	2	3
% Extraction Accuracy		130	110	95	110
% Instrument Accuracy		106	96	96	102

METHODS EPA 200.7.
CHEMIST: RR
SPIKE: 100 mg/L POTASSIUM, MAGNESIUM,
CV: 50 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich

3-27-98
Date

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Bobby Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

March 27, 1998
Receiving Date: 03/19/98
Sample Type: Water
Project No: TK 1201B
Project Location: Lovington, NM

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

Prep Date: 03/20/98
Analysis Date: 03/22/98
Sampling Date: 03/17/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TOTAL METALS

TA# FIELD CODE	As (mg/L)	Se (mg/L)	Cd (mg/L)	Cr (mg/L)	Pb (mg/L)	Ag (mg/L)	Ba (mg/L)	Al (mg/L)	Be (mg/L)	Hg (mg/L)
T93939 TK 1201 B	<0.05	<0.01	<0.02	<0.05	<0.01	<0.005	0.12	0.13	<0.02	<0.0010
ICV	1.0	0.98	1.0	1.0	1.0	0.19	0.99	1.1	1.0	0.0049
CCV	0.99	1.0	1.0	1.0	1.0	0.19	0.96	1.0	1.0	0.0046
METHOD BLANK	**<0.05**	**<0.01**	**<0.02**	**<0.05**	**<0.01**	**<0.002**	**<0.05**	**<0.05**	**<0.02**	**<0.0010**
REPORTING LIMIT	0.05	0.01	0.02	0.05	0.01	0.005	0.05	0.05	0.02	0.0010
RPD	5	0	0	0	0	3	0	4	0	2
% Extraction Accuracy	105	100	105	105	105	78	100	110	105	99
% Instrument Accuracy	99	99	100	100	100	95	98	105	100	95

TA# FIELD CODE	B (mg/L)	U (mg/L)	Co (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	V (mg/L)	Zn (mg/L)
T93939 TK 1201 B	0.19	<0.10	<0.05	<0.05	0.49	0.02	<0.05	<0.05	0.05	0.31
ICV	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
CCV	5.0	5.1	0.99	1.0	1.0	1.0	0.98	1.0	**1.0**	**1.0**
METHOD BLANK	**<0.10**	**<0.10**	**<0.05**	**<0.05**	**<0.02**	**<0.02**	**<0.05**	**<0.05**	**<0.05**	**<0.05**
REPORTING LIMIT	0.10	0.10	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05
RPD	2	0	0	5	0	0	0	5	5	0
% Extraction Accuracy	105	105	100	105	105	105	100	105	105	105
% Instrument Accuracy	101	101	99	100	100	100	99	100	100	100

METHODS: EPA 200.7, 245.1.
CHEMIST: As, Cd, Cr, Ba, Al, Be, Co, Cu, Fe, Mn, Mo, Ni, V, Zn, Se, Pb, Ag, B, U: RR Hg: HC
TOTAL METALS SPIKE: 2.0 mg/L As, Se, Cd, Cr, Pb, Ba, Al, Be, Co, Cu, Fe, Mn, Mo, Ni, B, V, Zn, U; 0.40 mg/L Ag; 0.0050 mg/L Hg.
TOTAL METALS CV: 1.0 mg/L As, Se, Cd, Cr, Pb, Ba, Al, Be, Co, Cu, Fe, Mn, Mo, Ni, V, Zn; 0.20 mg/L Ag; 5.0 mg/L U, B; 0.0050 mg/L Hg.

Director, Dr. Blair Leftwich

3-27-98
DATE

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E Mail: lab@traceanalysis.com

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

March 27, 1998
Receiving Date: 03/19/98
Sample Type: Water
Project No: TK 1201B
Project Location: Lovington, NM
Sampling Date: 03/17/98
Sample Condition: I & C
Sample Received by: VW
Extraction Date: 03/20/98
Analysis Date: 03/23/98

PAH 8270 Compounds (mg/L)	Reporting Limit	T93939 TK 1201 B	QC	RPD	%EA	%IA
Naphthalene	0.001	ND	82	0	66	103
Acenaphthylene	0.001	ND	80	1	82	100
Acenaphthene	0.001	ND	84	2	77	105
Fluorene	0.001	ND	81	3	76	101
Phenanthrene	0.001	ND	86	5	68	108
Anthracene	0.001	ND	82	8	61	103
Fluoranthene	0.001	ND	82	5	66	103
Pyrene	0.001	ND	92	6	88	115
Benzo[a]anthracene	0.001	ND	84	8	68	105
Chrysene	0.001	ND	78	9	71	98
Benzo[b]fluoranthene	0.001	ND	92	3	65	115
Benzo[k]fluoranthene	0.001	ND	94	14	100	118
Benzo[a]pyrene	0.001	ND	91	11	70	114
Indeno[1,2,3-cd]pyrene	0.001	ND	64	12	48	80
Dibenz[a,h]anthracene	0.001	ND	67	15	48	84
Benzo[g,h,i]perylene	0.001	ND	68	16	51	85

ND = Not Detected

SURROGATES	% RECOVERY
Nitrobenzene d5 SURR	73
2-Fluorobiphenyl SURR	72
Terphenyl-d14 SURR	95

METHODS: EPA SW 846-8270, 3510.
CHEMIST: MB

Director, Dr. Blair Leftwich

3-27-98
DATE

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E Mail: lab@traceanalysis.com

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

March 27, 1998
Receiving Date: 03/19/98
Sample Type: Water
Project No: TK 1201B
Project Location: Lovington, NM

Prep Date: 03/20/98
Analysis Date 03/20/98
Sampling Date: 03/17/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	pH (s.u.)	TSS (mg/L)	BOD5 (mg/L)	COD (mg/L)	SPECIFIC CONDUCTANCE (uMHOS/cm)	CYANIDE (mg/L)	OIL & GREASE (mg/l)	TDS (mg/L)
T93930	TK 1201B	7.8	<1.0	<7.5	<20	1,000	<0.010	<5.0	660
ICV		7.0	---	187	260	1,478	0.036	---	---
CCV		7.0	---	187	265	1,415	0.034	---	---
RPD		0	0	1	2	3	6	5	0
% Extraction Accuracy		---	---	---	103		85	93	---
% Instrument Accuracy		100	---	94	105	102	88	---	101
Reporting Limit		---	1.0	7.5	20	---	0.010	5.0	---

METHODS: EPA 405.1, 150.1, 160.2, 410.4, 120.1, 335.2, 413.1, 160.1.
CHEMIST: BOD5/TSS/pH: CS COD: JS SPECIFIC CONDUCTANCE/CYANIDE/TDS: RS/JS OIL & GREASE: M
COD SPIKE: 250 mg/L COD.
COD CV: 250 mg/L COD.
CYANIDE SPIKE: 0.040 mg/L CYANIDE.
CYANIDE CV: 0.040 mg/L CYANIDE.

Director, Dr. Blair Leftwich

3-27-98
DATE

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
Navajo Refining
Attention Darrell Moore
501 E. Main
Artesia NM 88210

Date: Mar 24, 1998
Project: TK 1201 B
Proj Name: N/A
Proj Loc: lovington,NM

Lab Receiving # : 9803000354
Date Rec: 3/19/98
Sampling Date: 3/17/98
Sample Condition: Intact and Cool
Sample Received By: VW

TA#	Field Code	MATRIX	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T93939	TK 1201 B Hydrotest	Water	<0.001	✓ 0.006	✓ 0.014	✓ 0.006	✓ 0.011	0.037
Method Blank			<0.001	<0.001	<0.001	<0.001	<0.001	
Reporting Limit			0.001	0.001	0.001	0.001	0.001	
QC			0.104	0.101	0.095	0.098	0.286	
RPD			0	2	1	15	1	
% Extraction Accuracy			101	102	96	115	98	
% Instrument Accuracy			104	101	95	98	95	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
BTEX	N/A	3/19/98	EPA 602	3/19/98	JG	0.100ea	0.1ea

Director, Dr. Blair Leftwich

3-24-98
Date

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 5 Lubbock Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

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

March 27, 1998
Receiving Date: 03/19/98
Sample Type: Water
Project No: TK 1201B
Project Location: Lovington, NM

Prep Date: 03/20/98
Analysis Date: 03/20/98
Sampling Date: 03/17/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	NITRATE-N (mg/L)	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	ALKALINITY (mg/L as CaCo3) HCO3	CO3
T93939	TK 1201B	4.3	220	1.5	81	170	<1.0
ICV		5.1	13	2.6	11	---	---
CCV		5.2	13	2.6	13	---	---
REPORTING LIMIT		0.4	5.0	0.2	1.0	1.0	1.0
RPD		1	0	0	0	0	0
% Extraction Accuracy		97	103	103	104	---	---
% Instrument Accuracy		104	104	106	102	---	---

METHODS: EPA 300.0, 310.1.
CHEMIST: JS
SPIKE: 25 mg/L CHLORIDE; 5.0 mg/L FLUORIDE; 25 mg/L SULFATE; 10 mg/L NITRATE-N.
CV: 12.5 mg/L CHLORIDE; 2.5 mg/L FLUORIDE; 12.5 mg/L SULFATE; 5.0 mg/L NITRATE-N.

Director, Dr. Blair Leftwich

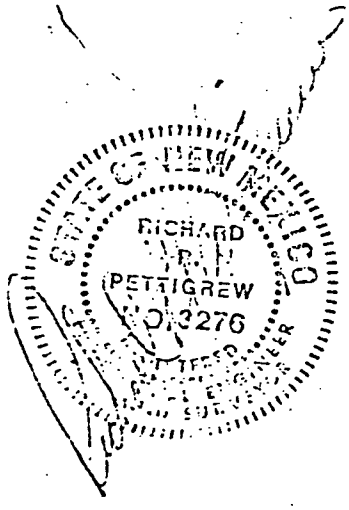
3-27-98
Date

SUB-SURFACE EXPLORATION

FOR

LOVINGTON TERMINAL FACILITIES

SOUTHERN UNION GAS COMPANY



PREPARED FOR:

FOSTER WHEELER CORPORATION
P. O. BOX 22395
HOUSTON, TEXAS 77027

LAB NO. 73L-2029

TABLE OF CONTENTS

PART I

REPORT

SCOPE

This Report presents the results of a Soils and Sub-Surface Investigation for Southern Union Gas Company's Proposed Terminal Facilities, located at Lovington, New Mexico. The purpose of this Investigation is to determine the physical characteristics of the sub-soils to provide recommendations for Foundation Design.

The Investigation was performed and this Report based on information received from Mr. R. P. Adams, Project Engineer, Foster Wheeler Corporation:

1) Key Plot Plan, Drawing No. 1290-1-01-1

2) Tankage Summary Sheet No. 1, Drawing No. 1290-4-11-1, Revision 0

3) Grid Coordinates of Borings, Letter of September 14, 1973

4) Elevation of Grid Coordinates per telephone conversation from Sherman & Jones

5) Basis of Soils Report, Foster Wheeler Foundation Standards - verbal from Mr. Adams

INVESTIGATION

Five (5) Test Borings were made on the site employing a rotary drilling rig using air. The locations of the Test Borings were selected by the Laboratory, relying upon the Key Plot Plan, Drawing No. 1290-1-01-1, supplied by Foster Wheeler Corporation. The locations of the Test Borings

were selected to be in the areas of individual tanks and were spaced to give maximum coverage of the area covered by the tank farm without drilling a test hole at each tank location. The locations and elevations of individual Test Borings are given in the Log of Boring.

During Test drilling, the soils encountered were continuously examined, visually classified, and where applicable, sampled. Standard Penetration Tests were performed at varying elevations as shown in the Log of Boring. Penetration resistance was measured by driving a 2" split tube sampler, having a 30" free fall drop hammer weighing 140 pounds. The cores were removed from the sampler tube in the field, logged and sealed to maintain the field conditions while being transported to the Laboratory.

Mechanical analysis and soils constant determination were made on the soils to help establish classification and identification of each soil. These Tests were also used to establish plasticity qualities and to give indication of the swell and settlement characteristics of the soils.

DISCUSSION OF RESULTS

The proposed site is located in grass land and in the midst of an oil field. There is no evidence of prior structures or deep site disturbance which would influence

performance of the foundation for proposed construction. The ground surface was firm and presented no mobilization problem for the drilling and should present no mobilization problem during construction.

As disclosed by the Test Borings, Caliche is predominate throughout the depth of the investigation. Caliche is a formation consisting of calcium carbonate and silica, and a form of clays, sand and gravel, cemented into a conglomerate by calcium carbonate.

The penetration resistance of the soils within the depth of the Test Borings are high. As shown in the Log of Borings, the Top Soil has a thickness of 6-10 inches and the Caliche Caprock a thickness of 22-48 inches.

In most areas were Caliche is the predominant formation, pockets of material of a sandy nature are often encountered. These pockets are generally small in area, up to six feet in diameter. The problems that arise in the Sub-Surface Analysis is when these pockets of material are <u>not</u> encountered during the Sub-Surface Exploration. Past experience has shown us that the bearing capacity of this material will generally vary from 2,000 to 4,000 lbs./sq.ft., which is considerably lower than the 7,000 to 12,000 lbs./sq.ft. bearing capacity of the solid Caliche. Although these pockets of material were <u>not</u> encountered during the Sub-Surface Exploration

for this Project, it is conceivable they can, or will, be encountered during the progress of construction. These pockets do not follow any set pattern as to location and/or depth or thickness.

CONCLUSIONS

The Log of Boring shows four (4) distinct Stratas encountered within the depth of the Test Holes. These Stratas are as follows:

1) Top Soil -- 0" to 10" (No classifications or tests were run on this Strata.)

2) Caliche Caprock -- Soil Classification SM-SC

3) Caliche -- Soil Classification SM-SC

4) Sandy Caliche -- Soil Classification SW-SP

With the exception of the Top Soil, the soil bearing capacity remained relatively uniform throughout the full depth of the Test Holes. Some variation in the moisture content of the material was noted; however, the moisture content of all materials tested is well below the liquid limit of the material.

Excavations for footings can be made vertical without the use of lateral support; however, the nature of the material excavated will probably present an irrigular face.

With the exception of vibratory loading, settlement will not be a factor using the allowable soil bearing capacity

as outlined under "Recommendations", unless the sandy material described in "Discussion of Results" above, is encountered.

Frost line depth is one foot below existing ground elevation.

RECOMMENDATIONS

It is recommeded that:

1) The allowable soil bearing capacity of 7,000 lbs./sq.ft. be used for all footings to elevations of 3810, with the exception of pockets of sandy material -- if they are encountered during construction.

2) Should these pockets of sandy material be encountered in construction; the Contractor should contact the Soils Engineer for further testing and consultation.

3) The allowable sliding friction is 0.20 x allowable bearing pressure.

4) All Top Soils in construction area be removed.

5) Holes or depressions caused by removal of underground utilities or by over excavation to the bottom of footings should be backfilled and compacted in layers not exceeding 6" in depth at approximately optimum moisute to at moisture

least 95% of Laboratory Density as determined by ASTM D-1557.

6) Excavated material (maximum particle size ½") should be considered as suitable backfill material.

7) Excavated material, Soil Classification SM-SC, (Maximum particle size ½") should be considered as suitable material for tank retainage dikes.

8) A minimum of 4" of cohensionless, non-expansive material be used beneath concrete slab on grade (desert blow sandhas proven to be acceptable for this material). This material should be compacted at approximately optimum moisture to not less than 95% of Laboratory Density as determined by ASTM D-698.

9) Portland Cement Concrete foundations should be in accordance with ACI 318.

10) Aggregates for Portland Cement Concrete should conform to ASTM C-33.

11) Portland Cement should be Type II.

12) All Exposed Portland Cement Concrete should have a minimum air content of 5% by volume plus or minus 1%.

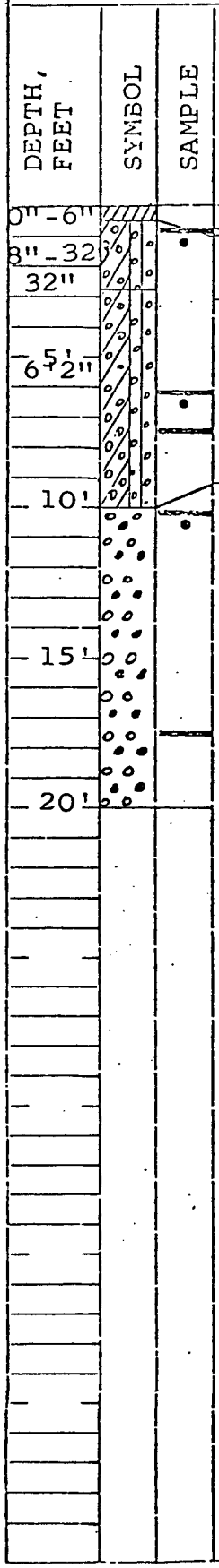
PART II

FIELD INVESTIGATION

LOG OF BORING

PROJECT: Lovington Terminal Facility
Southern Union Gas Company
CLIENT: Foster Wheeler
DATE: 9/24/73

BORING NO.: 1
LOCATION: 3+41(s)
18+08(W)
GROUND ELEVATION: 3823.8



LEGEND:

SAMPLE PENETRATION WATER

DESCRIPTION OF STRATUM

Top Soil

Caliche Caprock
Penetration - 8" in 50 Blows - Moisture Content-3.6%

Caliche

Penetration - 10" in 50 Blows - Moisture Content-3.3%

Moisture Content - 5.8%

Sandy Caliche
Penetration - 8" in 50 Blows - Moisture Content-6.6%

Moisture Content - 4.1%

Total Depth of Hole - 20'

RICHARD R. PETTIGREW & ASSOCIATES

LOG OF BORING

PROJECT: Lovington Terminal Facility
Southern Union Gas Company
CLIENT: Foster Wheeler
DATE: 9/24/73

BORING NO.: 2
LOCATION: 4+47(S) 13+08(W)
GROUND ELEVATION: 3823.3

LEGEND:

SAMPLE PENETRATION WATER

DEPTH, FEET	SYMBOL	SAMPLE	DESCRIPTION OF STRATUM
0"-10"			Top Soil
10"-36"			Caliche Caprock
36"			Penetration - 1" in 50 Blows
			Caliche
5'			Penetration - 7" in 50 Blows - Moisture Content-6.3%
			Penetration - 6" in 50 Blows - Moisture Content-4.8%
10'-10"			Sandy Caliche
			Penetration - 5" in 50 Blows - Moisture Content-4.2%
			Total Depth of Hole - 12'

RICHARD R. PETTIGREW & ASSOCIATES

LOG OF BORING

PROJECT: Lovington Terminal Facility
CLIENT: Southern Union Gas Company
Foster Wheeler
DATE: 9/24/73

BORING NO.: 3
LOCATION: 8+89 (S) 13+20 (W)
GROUND ELEVATION: 3820.9

LEGEND:

SAMPLE PENETRATION WATER

DEPTH, FEET	SYMBOL	SAMPLE	DESCRIPTION OF STRATUM
0"-6"			Top Soil
6"			Caliche Caprock
4'6"			
5'			Caliche Penetration - 12" in 44 Blows - Moisture Content-12.1% Moisture Content - 5.4%
10'			
10'8"			Sandy Caliche Penetration - 8" in 50 Blows - Moisture Content-6.8% Total Depth of Hole - 13'

RICHARD R. PETTIGREW & ASSOCIATES

LOG OF BORING

PROJECT: Lovington Terminal Facility
CLIENT: Southern Union Gas Company
Foster Wheeler
DATE: 9/24/73

BORING NO.: 4
LOCATION: 13+61(S) 13+44(W)
GROUND ELEVATION: 3820.4

LEGEND:

SAMPLE PENETRATION WATER

DEPTH, FEET	SYMBOL	SAMPLE	DESCRIPTION OF STRATUM
0'-8"			Top Soil
8"			Caliche Caprock Penetration - 1½" in 50 Blows
4'2"			Caliche Penetration - 1¼" in 50 Blows Penetration - 8" in 50 Blows - Moisture Content-6.1%
5'			
10'			Penetration - 5" in 50 Blows - Moisture Content-4.6%
14'			
15'			Sandy Caliche Moisture Content - 3.3% Total Depth of Hole - 15'

RICHARD R. PETTIGREW & ASSOCIATES

LOG OF BORING

PROJECT: Lovington Terminal Facility
Southern Union Gas Company
CLIENT: Foster Wheeler
DATE: 9/24/73

BORING NO.: 5
LOCATION: 13+61(S) 10+85(W)
GROUND ELEVATION: 3820.5

LEGEND: ⟸ SAMPLE ● PENETRATION ▲ WATER

DEPTH, FEET	SYMBOL	SAMPLE	DESCRIPTION OF STRATUM
0"-9"	////		Top Soil - Moisture Content-10.1%
9"		●	Caliche Caprock
30"			Penetration - 1½" in 50 Blows
		●	Caliche
5'			Penetration - 3" in 50 Blows
		●	Penetration - 12" in 49 Blows - Moisture Content-11.8%
10'		●	Penetration - 5" in 50 Blows - Moisture Content-7.7%
			Sandy Caliche
		●	Penetration - 8" in 50 Blows - Moisture Content-5.2%
			Total Depth of Hole - 14'

PART III

LABORATORY INVESTIGATION

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:

SIEVE ANALYSIS

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

SIEVE SIZE	COMBINATION OF SAMPLES BORING NO. 1 (8"--16") " " 5 (9"--12") % PASSING
1½"	100 %
1¼"	78.7
3/4"	65.2
½"	53.0
3/8"	46.1
No. 4	36.3
No. 10	26.8
No. 20	21.3
No. 40	18.3
No. 80	15.4
No. 200	9.8

LAB. No. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:
SOIL ANALYSES & CLASSIFICATION
BORING Nos. 1, 2 & 4

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

COMBINATION OF SAMPLES
BORING NO. 1 (6'2"--7'3/4")
" " 2 (5'1"--5'7-3/4")
" " 4 (4'8"--5'3-3/4")

SIEVE SIZE	% PASSING
1½"	100 %
1¼"	90.3
½"	81.3
3/8"	74.8
No. 4	63.2
No. 10	50.5
No. 20	41.6
No. 40	35.4
No. 80	25.6
No. 200	14.9
Liquid Limit	29.4
Plastic Limit	25.3
Plasticity Index	4.1
Linear Shrinkage	2.3
Soil Classification	SM-SC -- Silty Sands, Sand-Silt Mixtures, Clayey Sands, & Sand-Clay Mixtures

LAB. No. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:
SOIL ANALYSES & CLASSIFICATION
BORINGS No. 3 & 5

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

SIEVE SIZE	COMBINATION OF SAMPLES BORING NO. 3 -- (5'--6') " " 5 -- (5'--6') % PASSING
½"	100 %
3/8"	99.8
No. 4	97.2
No. 10	94.6
No. 20	90.7
No. 40	87.6
No. 80	66.8
No. 200	35.5
Liquid Limit	30.7
Plastic Limit	23.5
Plasticity Index	7.2
Linear Shrinkage	3.7
Soil Classification	SM-SC -- Silty Sands, Sand-Silt Mixtures, Clayey Sands, & Sand-Clay Mixtures

LAB. No. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:
SOIL ANALYSES & CLASSIFICATION
BORINGS NO. 3 & 4

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

SIEVE SIZE	COMBINATION OF SAMPLES BORING NO. 3 (9'-10') " " 4 (9'2"-9'4-3/4") % PASSING
3/4"	100 %
½"	98.6
3/8"	95.0
No. 4	81.0
No. 10	65.4
No. 20	58.8
No. 40	54.1
No. 80	39.8
No. 200	19.2
Liquid Limit	30.0
Plastic Limit	23.0
Plasticity Index	7.0
Linear Shrinkage	3.0
Soil Classification	SM-SC -- Silty Sands, Sand-Silt Mixtures, Clayey Sands, & Sand-Clay Mixtures

LAB. NO. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:
SOIL ANALYSES & CLASSIFICATION
BORINGS NO. 1 & 4

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

SIEVE SIZE	COMBINATION OF SAMPLES BORING NO. 1 (15'--20') " " 4 (14'--15') % PASSING
3/4"	100 %
½"	99.0
3/8"	97.6
No. 4	94.0
No. 10	91.6
No. 20	90.1
No. 40	88.9
No. 80	69.3
No. 200	11.1
Linear Shrinkage	0
Soil Classification	SW-SP -- Well-Graded to Poorly-Graded Sands, Gravelly Sands with little or no Fines.

LAB. No. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

RICHARD R. PETTIGREW AND ASSOCIATES

P. O. DRAWER 807
CLOVIS, NEW MEXICO 88101
505 762-3716

TO: FOSTER WHEELER CORPORATION

TYPE OF TEST:
SOIL ANALYSES & CLASSIFICATION
BORINGS NO. 2, 3 & 5

PROJECT: LOVINGTON TERMINAL FACILITIES
SOUTHERN UNION GAS COMPANY

DATE OF TEST: September 26, 1973

COMBINATION OF SAMPLES
BORING NO. 2 (11'4"--11'9")
" " 3 (10'8"--11'3-3/4")
" " 5 (13'--13'7-3/4")

SIEVE SIZE	% PASSING
3/4"	100 %
½"	98.5
3/8"	98.1
No. 4	95.9
No. 10	94.0
No. 20	91.8
No. 40	90.0
No. 80	55.4
No. 200	10.6
Linear Shrinkage	0
Soil Classification	SW-SP -- Well-Graded to Poorly-Graded Sands, Gravelly Sands with little or no Fines.

LAB. NO. 73L-2029

COPIES TO:

RICHARD R. PETTIGREW AND ASSOCIATES

BY

American Environmental Network, Inc.

AEN I.D. 611334

December 16, 1996

N.M. OIL CONSERVATION DIVISION
2040 SOUTH PACHECO
SANTA FE, NM 87505

Project Name Navajo Lea Refinery
Project Number (none)

Attention: BILL OLSON

On 11/20/96 American Environmental Network (NM), Inc. (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8010/8020 was performed by American Environmental Network (NM) Inc., Albuquerque, NM.

EPA method 8310 was performed by American Environmental Network (FL) Inc., Pensacola, FL.

All other analyses were performed by American Environmental Network (AZ) Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure

2709-D Pan American Freeway, NE • Albuquerque, NM 87107 • (505) 344-3777 • Fax (505) 344-4413

American Environmental Network, Inc.

CLIENT : AMERICAN ENV. NETWORK OF NM, INC.
PROJECT # : 611334
PROJECT NAME : NMOCD
ATI I.D. : 611750

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	611334-01	AQUEOUS	11/19/96
02	611334-02	AQUEOUS	11/19/96
03	611334-03	AQUEOUS	11/19/96

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	3

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

American Environmental Network, Inc.

CLIENT	: N.M. OIL CONSERVATION DIVISION	AEN I.D.	: 611334
PROJECT #	: (none)	DATE RECEIVED	: 11/20/96
PROJECT NAME	: Navajo Lea Refinery	REPORT DATE	: 12/16/96

AEN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	MW-10 (9611191005)	AQUEOUS	11/19/96
02	MW-3 (9611191105)	AQUEOUS	11/19/96
03	MW-8 (9611191210)	AQUEOUS	11/19/96
04	TRIP BLANK	AQUEOUS	11/15/96

American Environmental Network, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 611750

CLIENT : AMERICAN ENV. NETWORK OF NM, INC.
PROJECT # : 611334
PROJECT NAME : NMOCD : 12/12/96

PARAMETER	UNITS	01	02	03
CARBONATE (CACO3)	MG/L	<1	<1	<1
BICARBONATE (CACO3)	MG/L	202	258	320
HYDROXIDE (CACO3)	MG/L	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	202	258	320
BROMIDE (EPA 300.0)	MG/L	0.4	0.6	0.8
CHLORIDE (EPA 325.2)	MG/L	27	80	180
CONDUCTIVITY, (UMHOS/CM)		621	832	1260
FLUORIDE (EPA 340.2)	MG/L	1.03	0.85	1.48
PH (EPA 150.1)	UNITS	7.8	7.5	7.2
SULFATE (EPA 375.2)	MG/L	100	80	100
T. DISSOLVED SOLIDS (160.1)	MG/L	420	550	780

American Environmental Network, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : AMERICAN ENV. NETWORK OF NM, INC.
PROJECT # : 611334
PROJECT NAME : NMOCD ATI I.D. : 611750

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	61175001	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		202	200	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		202	200	1	NA	NA	NA
BROMIDE	MG/L	61175001	0.4	0.4	0	2.4	2.0	100
CHLORIDE	MG/L	61175002	80	80	0	180	100	100
CONDUCTIVITY(UMHOS/CM)		61172401	833	831	0.2	NA	NA	NA
FLUORIDE	MG/L	61168702	1.98	1.97	0.5	3.97	2.00	100
PH	UNITS	61175001	7.8	7.7	1	NA	NA	NA
SULFATE	MG/L	61181701	16	16	0	32	20	80
TOTAL DISSOLVED SOLIDS	MG/L	61175001	420	430	2	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

American Environmental Network, Inc.

METALS RESULTS

ATI I.D. : 611750

CLIENT : AMERICAN ENV. NETWORK OF NM, INC.
PROJECT # : 611334
PROJECT NAME : NMOCD

PARAMETER	UNITS	01	02	03
CALCIUM (EPA 200.7/6010)	MG/L	87.2	115	132
POTASSIUM (EPA 200.7/6010)	MG/L	3.5	2.1	5.2
MAGNESIUM (EPA 200.7/6010)	MG/L	9.7	14.1	14.7
SODIUM (EPA 200.7/6010)	MG/L	40.4	50.4	171

American Environmental Network, Inc.

METALS - QUALITY CONTROL

CLIENT : AMERICAN ENV. NETWORK OF NM, INC.
PROJECT # : 611334
PROJECT NAME : NMOCD ATI I.D. : 611750

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CALCIUM	MG/L	61175003	132	130	2	178	50.0	92
POTASSIUM	MG/L	61175003	5.2	5.0	4	119	100	114
MAGNESIUM	MG/L	61175003	14.7	14.6	0.7	39.6	25.0	100
SODIUM	MG/L	61175003	171	170	0.6	228	50.0	114

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

American Environmental Network, Inc.

DATE: 12-10-96

ION BALANCE

AEN ACCESSION NUMBER: 61175001
SAMPLE IDENTIFICATION: 611334-01
CLIENT: AMERICAN ENV. NETWORK OF NM, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL	
ALKALINITY (AS $CaCO_3$)	202.000	0.02000	4.04000	
CHLORIDE	27.000	0.02821	0.76167	
FLUORIDE	1.030	0.05264	0.05422	
NITRATE AS N (NO_3(NO_3-N X 4.43)	NA	0.01613	0.00000	
SiO_3 (SILICON X 2.71)	NA	0.02629	0.00000	
SULFATE	100.000	0.02082	2.08200	
		TOTAL ANIONS		6.937889

CATIONS	RESULT	FACTOR	TOTAL	
CALCIUM	87.200	0.04990	4.35128	
POTASSIUM	3.500	0.02558	0.08953	
MAGNESIUM	9.700	0.08229	0.79821	
SODIUM	40.400	0.04350	1.75740	
		TOTAL CATIONS		6.996423
		%RPD (<10%)*		-0.84
TOTAL ANIONS/CATIONS	(CALCULATED)	390.030		
TOTAL DISSOLVED SOLIDS	(ANALYZED)	420	%RPD (<15%)*	-7.40
ELECTRICAL COND.		621	TDS/EC RATIO (0.65+/-0.10)	0.68

* If either Total Cations or Total Anions <10, then the %RPD Limit is not applicable.

American Environmental Network, Inc.

DATE: 12-10-96

ION BALANCE

AEN ACCESSION NUMBER: 61175002
SAMPLE IDENTIFICATION: 611334-02
CLIENT: AMERICAN ENV. NETWORK OF NM, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL	
ALKALINITY (AS $CACO_3$)	258.000	0.02000	5.16000	
CHLORIDE	80.000	0.02821	2.25680	
FLUORIDE	0.850	0.05264	0.04474	
NITRATE AS N (NO_3(NO_3-N X 4.43)	NA	0.01613	0.00000	
SiO_3 (SILICON X 2.71)	NA	0.02629	0.00000	
SULFATE	80.000	0.02082	1.66560	
		TOTAL ANIONS		9.127144

CATIONS	RESULT	FACTOR	TOTAL	
CALCIUM	115.000	0.04990	5.7385	
POTASSIUM	2.100	0.02558	0.05372	
MAGNESIUM	14.100	0.08229	1.16029	
SODIUM	50.400	0.04350	2.19240	
		TOTAL CATIONS		9.144907
		%RPD (<10%)*		-0.19
TOTAL ANIONS/CATIONS	(CALCULATED)	497.250		
TOTAL DISSOLVED SOLIDS	(ANALYZED)	550	%RPD (<15%)*	-10.07
ELECTRICAL COND.		832	TDS/EC RATIO (0.65+/-0.10)	0.66

* If either Total Cations or Total Anions <10, then the %RPD Limit is not applicable.

American Environmental Network, Inc.

DATE: 12-10-96

ION BALANCE

AEN ACCESSION NUMBER: 61175003
SAMPLE IDENTIFICATION: 611334-03
CLIENT: AMERICAN ENV. NETWORK OF NM, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL	
ALKALINITY (AS $CACO_3$)	320.000	0.02000	6.40000	
CHLORIDE	180.000	0.02821	5.07780	
FLUORIDE	1.480	0.05264	0.07791	
NITRATE AS N (NO_3(NO_3-N X 4.43)	NA	0.01613	0.00000	
SiO_3 (SILICON X 2.71)	NA	0.02629	0.00000	
SULFATE	100.000	0.02082	2.08200	
		TOTAL ANIONS		13.63771

CATIONS	RESULT	FACTOR	TOTAL	
CALCIUM	132.000	0.04990	6.5868	
POTASSIUM	5.200	0.02558	0.13302	
MAGNESIUM	14.700	0.08229	1.20966	
SODIUM	171.000	0.04350	7.43850	
		TOTAL CATIONS		15.36798
		%RPD (<10%)*		-11.93
TOTAL ANIONS/CATIONS	(CALCULATED)	796.380		
TOTAL DISSOLVED SOLIDS	(ANALYZED)	780	%RPD (<15%)*	2.08
ELECTRICAL COND.		1260	TDS/EC RATIO (0.65+/-0.10)	0.62

* If either Total Cations or Total Anions <10, then the %RPD Limit is not applicable.

American Environmental Network, Inc.

GAS CHROMOTOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS / AROMATICS (EPA 601/602)
CLIENT : N.M. OIL CONSERVATION DIVISION AEN I.D.: 611334
PROJECT # : (none)
PROJECT NAME : Navajo Lea Refinery

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	MW-10 (9611191005)	AQUEOUS	11/19/96	NA	11/21/96	1
02	MW-3 (9611191105)	AQUEOUS	11/19/96	NA	11/21/96	1
03	MW-8 (9611191210)	AQUEOUS	11/19/96	NA	11/21/96	1

PARAMETER	DET. LIMIT	UNITS	01	02	03
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMODICHLORMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
BROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,3-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	0.3	UG/L	< 0.3	< 0.3	< 0.3
1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5	< 2.5	< 2.5
METHYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
TRICHLOROETHENE	0.3	UG/L	< 0.3	< 0.3	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5
SURROGATE:					
BROMOCHLOROMETHANE (%)			101	105	104
SURROGATE LIMITS	(73 - 117)				
TRIFLUOROTOLUENE (%)			94	93	99
SURROGATE LIMITS	(69 - 117)				

CHEMIST NOTES:
N/A

American Environmental Network, Inc.

GAS CHROMOTOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS / AROMATICS (EPA 601/602)
CLIENT : N.M. OIL CONSERVATION DIVISION AEN I.D.: 611334
PROJECT # : (none)
PROJECT NAME : Navajo Lea Refinery

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	TRIP BLANK	AQUEOUS	11/15/96	NA	11/21/96	1

PARAMETER	DET. LIMIT	UNITS	04
BENZENE	0.5	UG/L	< 0.5
BROMODICHLORMETHANE	0.2	UG/L	< 0.2
BROMOFORM	0.5	UG/L	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5
CHLOROFORM	0.5	UG/L	< 0.5
CHLOROMETHANE	1.0	UG/L	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2
1,2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2
1,2-DICHLOROBENZENE	0.5	UG/L	< 0.5
1,3-DICHLOROBENZENE	0.5	UG/L	< 0.5
1,4-DICHLOROBENZENE	0.5	UG/L	< 0.5
1,1-DICHLOROETHANE	0.3	UG/L	< 0.3
1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	< 0.2
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2
trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2
ETHYLBENZENE	0.5	UG/L	< 0.5
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5
METHYLENE CHLORIDE	2.0	UG/L	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5
TETRACHLOROETHENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2
TRICHLOROETHENE	0.3	UG/L	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5
SURROGATE:			
BROMOCHLOROMETHANE (%)			103
SURROGATE LIMITS	(73 - 117)		
TRIFLUOROTOLUENE (%)			105
SURROGATE LIMITS	(69 - 117)		

CHEMIST NOTES:
N/A

American Environmental Network, Inc.

GAS CHROMOTOGRAPHY RESULTS
REAGENT BLANK

TEST	: PURGEABLE HALOCARBONS / AROMATICS (EPA 601/602)		
BLANK I.D.	: 112196	AEN I.D.	: 611334
CLIENT	: N.M. OIL CONSERVATION DIVISION	DATE EXTRACTED	: NA
PROJECT #	: (none)	DATE ANALYZED	: 11/21/96
PROJECT NAME	: Navajo Lea Refinery	SAMPLE MATRIX	: AQUEOUS

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLORMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.3
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
cis-1,2-DICHLOROETHENE	UG/L	<0.2
trans-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
cis-1,3-DICHLOROPROPENE	UG/L	<0.2
trans-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYL -t-BUTYL ETHER	UG/L	<2.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.5
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.3
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:		
BROMOCHLOROMETHANE (%)		105
SURROGATE LIMITS	(73 - 117)	
TRIFLUOROTOLUENE (%)		95
SURROGATE LIMITS	(69 - 117)	

CHEMIST NOTES:
N/A

American Environmental Network, Inc.

GAS CHROMOTOGRAPHY QUALITY CONTROL
MSMSD

TEST	: PURGEABLE HALOCARBONS / AROMATICS (EPA 601/602)		
MSMSD #	: 611334-03	AEN I.D.	: 611334
CLIENT	: N.M. OIL CONSERVATION DIVISION	DATE EXRACTED	: NA
PROJECT #	: (none)	DATE ANALYZED	: 11/21/96
PROJECT NAME	: Navajo Lea Refinery	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	9.9	99	10.3	103	4	(82 -128)	20
TOLUENE	<0.5	10.0	9.7	97	10.4	104	7	(87 -128)	20
1,1-DICHLOROETHENE	<0.2	10.0	9.0	90	9.9	99	10	(44 - 99)	20
TRICHLOROETHENE	<0.3	10.0	11.5	115	11.8	118	3	(89 - 127)	20
CHLOROBENZENE	<0.5	10.0	9.7	97	10.7	107	10	(87 - 124)	20

CHEMIST NOTES:
N/A

$$\%\ \text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	611559
Client:	AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number:	611334
Project Name:	NMOCD
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	001	Sample Date/Time:	19-NOV-96 1005
Client Sample Id:	611334-01	Received Date:	21-NOV-96
Batch: PAW220		Extraction Date:	22-NOV-96
Blank: B	Dry Weight %: N/A	Analysis Date:	26-NOV-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	0.1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	78	28-138	
ANALYST	INITIALS	JBT		

Comments:

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	611559
Client:	AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number:	611334
Project Name:	NMOCD
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	002	Sample Date/Time:	19-NOV-96 1105
Client Sample Id:	611334-02	Received Date:	21-NOV-96
Batch: PAW220		Extraction Date:	22-NOV-96
Blank: B	Dry Weight %: N/A	Analysis Date:	26-NOV-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	0.1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	76	28-138	
ANALYST	INITIALS	JBT		

Comments:

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	611559
Client:	AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number:	611334
Project Name:	NMOCD
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	003	Sample Date/Time:	19-NOV-96 1210
Client Sample Id:	611334-03	Received Date:	21-NOV-96
Batch: PAW220		Extraction Date:	22-NOV-96
Blank: B	Dry Weight %: N/A	Analysis Date:	27-NOV-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	1	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	0.1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	66	28-138	
ANALYST	INITIALS	JBT		

Comments:

American Environmental Network, Inc.

"Method Report Summary"

Accession Number: 611559
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 611334
Project Name: NMOCD
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
611334-03	ACENAPHTHENE	UG/L	1

American Environmental Network, Inc. Olive Ave

"QC Report"

Title: Water Blank
Batch: PAW220
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: B Date Analyzed: 26-NOV-96 Date Extracted: 22-NOV-96

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO(a)ANTHRACENE	UG/L	ND	1
BENZO(a)PYRENE	UG/L	ND	1
BENZO(b)FLUORANTHENE	UG/L	ND	1
BENZO(g,h,i)PERYLENE	UG/L	ND	1
BENZO(k)FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	88	28-138
ANALYST	INITIALS	JBT	

Comments:

American Environmental Network, Inc.

"QC Report"

Title: Water Reagent
Batch: PAW220
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 24-NOV-96 RS Date Extracted: 21-NOV-96
RSD Date Analyzed: 24-NOV-96 RSD Date Extracted: 21-NOV-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	5.0	50	5.0	50	0	46	46-110
BENZO(k)FLUORANTHENE	10.0	<1	8.0	80	7.9	79	1	30	58-128
CHRYSENE	10.0	<1	7.7	77	7.8	78	1	29	62-129
PHENANTHRENE	10.0	<1	7.7	77	7.7	77	0	28	61-116
PYRENE	10.0	<1	7.7	77	7.7	77	0	26	62-120
Surrogates:									
2-CHLOROANTHRACENE				81		81			28-138

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

American Environmental Network, Inc.

"QC Report"

Title: Water Matrix
Batch: PAW220
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Dry Weight %: N/A
Sample Spiked: 611559-2

MS Date Analyzed: 26-NOV-96
MSD Date Analyzed: 27-NOV-96

MS Date Extracted: 22-NOV-96
MSD Date Extracted: 22-NOV-96

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	6.6	66	7.0	70	6	42	14-135
BENZO(k)FLUORANTHENE	10.0	<1	4.6	46	5.3	53	14	58	25-142
CHRYSENE	10.0	<1	6.3	63	7.0	70	11	51	3-176
PHENANTHRENE	10.0	<1	6.9	69	7.6	76	10	55	27-146
PYRENE	10.0	<1	6.9	69	7.7	77	11	47	15-157
Surrogates:									
2-CHLOROANTHRACENE				80		90			28-138

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

American Environmental Network, Inc.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX
AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW = STEVE WILHITE
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
BC = BETH COLEMAN
KS = KENDALL SMITH
KK = KERRY LEMONT
DWB = DAVID W. BOWERS
RP = ROB PEREZ
JBT = JENNIFER TORRANCE
LP = LAVERNE PETERSON

American Environmental Network (NM), Inc.
Albuquerque • Phoenix • Pensacola • Portland • Pleasant Hills • Columbia

CHAIN OF CUSTODY

DATE: 11/20/96 PAGE: 1 OF 1

AEN LAB I.D. 6011334

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Bill Olson

COMPANY: N.M. Oil Conservation Division
ADDRESS: 2040 S. Pacheco
Santa Fe, NM. 87505
PHONE: (505) 827-7154
FAX: (505) 827-8177

BILL TO: Same
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	BTXE/MTBE (8020)	BTEX & Chlorinated Aromatics (602/8020)	BTEX/MTBE/EDC & EDB (8020/8010/Short)	Chlorinated Hydrocarbons (601/8010)	Polynuclear Aromatics (610/8310)	General Chemistry: Cations/Anions + ion balance	NUMBER OF CONTAINERS
MW-10 (9611191005)	11/19/96	1005	water	-01	3	—	—	3	2	1	6
MW-3 (9611191105)	11/19/96	1105	water	-02	3	—	—	3	2	1	6
MW-8 (9611191210)	11/19/96	1210	water	-03	3	—	—	3	2	1	6
Trip Blank	11/15/96	1100	water	-04	1	—	—	1			1

PROJECT INFORMATION	
PROJ. NO.:	
PROJ. NAME:	Navajo Ref Refinery
P.O. NO.:	
SHIPPED VIA:	

SAMPLE RECEIPT	
NO. CONTAINERS	19
CUSTODY SEALS	Y / N / (NA)
RECEIVED INTACT	Y
BLUE ICE/ICE	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Time: 1435	Signature: Time:
Printed Name: Bill Olson Date: 11/20/96	Printed Name: Date:
Company: NM OCD	Company:
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Time: 1435
Printed Name: Date:	Printed Name: Date: 11/20/96
Company:	American Enviromental Network (NM), Inc.

DISTRIBUTION: White, Canary - AEN Pink - ORIGINATOR

American Environmental Network
Albuquerque, New Mexico

Interlab Chain of Custody

DATE 11/20/96 PAGE 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D. McNEILL

COMPANY: American Environmental Network
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

611559

CLIENT PROJECT MANAGER:

Kim McNeill

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
611334-01	11/19/96	1005	H_2O	
-02	"	1105	"	
-03	"	1210	"	

	Metals - TAL	Metals - PP List	Metals - RCRA	RCRA Metals by TCLP (1311)		TOX	TOC	Gen Chemistry	8310		Oil and Grease	BOD	COD	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	8240 (TCLP 1311) ZHE	8270 (TCLP 1311)			TCLP	Gross Alpha/Beta				NUMBER OF CONTAINERS
611334-01									X																			1
-02									X																			1
-03									X																			1

PROJECT INFORMATION

PROJECT NUMBER 611334
PROJECT NAME NMOCD
QC LEVEL (STD) IV
QC REQUIRED MS MSD BLANK
TAT (STANDARD) RUSH!

DUE DATE 12/5
RUSH SURCHARGE Ø
CLIENT DISCOUNT Quote
SPECIAL CERTIFICATION REQUIRED: ☐ YES ☐ NO

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	

SAMPLES SENT TO:
SAN DIEGO
Paragon
RENTON
PENSACOLA
PORTLAND
PHOENIX

RELINQUISHED BY: 1.
Signature: Time 1550
Printed Name: Date 11/20/96
Miles Timansky
Albuquerque

RECEIVED BY: 1.
Signature: Time 0845
Printed Name: Date: 11/21/96
Linda L. Kitt
Company: AEN/71

RELINQUISHED BY: 2
Signature Time
Printed Name Date
Company

RECEIVED BY: (LAB) 2.
Signature: Time
Printed Name: Date
Company

American Environmental Network (NM), Inc.
Albuquerque • Phoenix • Pensacola • Portland • Pleasant Hills • Columbia

CHAIN OF CUSTODY

DATE: 11/20/96 PAGE: 1 OF 1

AEN LAB I.D. 611334/611559

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Bill Olson

COMPANY: N.M. Oil Conservation Division
ADDRESS: 2040 S. Pacheco
Sant. Fe, NM. 87505
PHONE: (505) 827-7154
FAX: (505) 827-8177

BILL TO: Sime
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct/Inject	(M8015) Gas/Purge & Trap	Gasoline/BTEX & MTBE (M8015/8020)	BTXE/MTBE (8020)	BTEX & Chlorinated Aromatics (602/8020)	BTEX/MTBE/EDC & EDB (8020/8010/Short)	Chlorinated Hydrocarbons (601/8010)	504 EDB☐ / DBCP☐	Polynuclear Aromatics (610/8310)	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
MW-10 (9611191005)	11/19/96	1005	water	-01					3			3		2						1						6
MW-3 (9611191105)	11/19/96	1105	Water	-02					3			3		2						1						6
MW-8 (9611191210)	11/19/96	1210	water	-03					3			3		2						1						6
Trip Blank	11/15/96	1100	water	-04					1			1														1

Cations/Anions, 4 ion balance

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: Navajo Lea Refinery
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS	19
CUSTODY SEALS	Y/N/(NA)
RECEIVED INTACT	Y
BLUE ICE/ICE	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.

Signature: Time: 1435
Printed Name: Bill Olson Date: 11/20/96
Company: NM OCD

RECEIVED BY: 1.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.

Signature Time
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.

Signature: Time: 1435
Printed Name: Date: 11/20/96
American Environmental Network (NM), Inc.

American Environmental Network
Albuquerque, New Mexico

Interlab Chain of Custody

DATE 11/20/96 PAGE 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D. McNEILL

COMPANY: American Environmental Network
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:
Kim McNeill

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals - TAL	Metals - PP List	Metals - RCRA	RCRA Metals by TCLP (1311)	F, Br, Ca, K, Mg, Na, Alk group	Cl, SO_4, TDS, pH & cat/an. balance	TOX	TOC	Gen Chemistry			Oil and Grease	BOD	COD	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	8240 (TCLP 1311) ZHE	8270 (TCLP 1311)				Gross Alpha/Beta			NUMBER OF CONTAINERS
611334-01	11/19/96	1005	H_2O	1					X	X																							
-02	↓	1105	↓	2					X	X																							
-03	↓	1210	↓	3					X	X																							

PROJECT INFORMATION

PROJECT NUMBER 611334
PROJECT NAME NMOCD
QC LEVEL (STD) IV
QC REQUIRED: MS MSD BLANK
TAT STANDARD RUSH

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS 3
CHAIN OF CUSTODY SEALS NA
INTACT? Y
RECEIVED GOOD COND/COLD BLUE
LAB NUMBER 611750

DUE DATE 12/5
RUSH SURCHARGE ϕ
CLIENT DISCOUNT Quote
SPECIAL CERTIFICATION REQUIRED: [ ] YES [ ] NO

SAMPLES SENT TO:

SAN DIEGO
Paragon
RENTON
PENSACOLA
PORTLAND
PHOENIX

RELINQUISHED BY: 1.

Signature: Kim McNeill Time: 4pm
Printed Name: Kim McNeill Date: 11/20/96
Albuquerque

RECEIVED BY: 1.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2

Signature Time
Printed Name Date
Company

RECEIVED BY: (LAB) 2.

Signature: Time:
Printed Name: Date:
Heather Woodington 11/21/96
Company

Labs San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777

American Environmental Network (NM), Inc.
Albuquerque • Phoenix • Pensacola • Portland • Pleasant Hills • Columbia

CHAIN OF CUSTODY

DATE: 11/20/96 PAGE: 1 OF 1

AEN LAB I.D. 611334

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Bill Olson

COMPANY: N.M. Oil Conservation Division
ADDRESS: 2040 S. Pacheco
Sant. Fe, NM. 87505
PHONE: (505) 827-7154
FAX: (505) 827-8177

BILL TO: Same
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct/Inject	(M8015) Gas/Purge & Trap	Gasoline/BTEX & MTBE (M8015/8020)	BTXE/MTBE (8020)	BTEX & Chlorinated Aromatics (602/8020)	BTEX/MTBE/EDC & EDB (8020/8010/Short)	Chlorinated Hydrocarbons (601/8010)	504 EDB / DBCP	Polynuclear Aromatics (610/8310)	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
MW-10 (9611191005)	11/19/96	1005	Water	-01					3			3		2						1						6
MW-3 (9611191105)	11/19/96	1105	Water	-02					3			3		2						1						6
MW-8 (9611191210)	11/19/96	1210	Water	-03					3			3		2						1						6
Trip Blank	11/15/96	1100	Water	-04					1			1														1

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: Navajo Ref Refinery
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS	19
CUSTODY SEALS	Y/N/(NA)
RECEIVED INTACT	Y
BLUE ICE/ICE	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) X

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.
Signature: Bill Olson Time: 1435
Printed Name: Bill Olson Date: 11/20/96
Company: NM OCD

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2
Signature Time
Printed Name Date
Company

RECEIVED BY: (LAB) 2.
Signature: Time: 1435
Printed Name: Date: 11/20/96
American Environmental Network (NM), Inc.

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
GCL
Attention Gil VanDeVenter
415 W. Wall, Suite 1818
Midland TX 79701

Date: Nov 26, 1996
Date Rec: 11/21/96
Project: 2033-005
Proj Name: Navajo-Lea Refining
Proj Loc: N/A

Lab Receiving # : 9611000381
Sampling Date: 11/19/96
Sample Condition: Intact and Cool
Sample Received By: ML

TA#	Field Code	MATRIX	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T 63120	MW-10	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
T 63121	MW-3	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
T 63122	MW-8	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
T 63123	MW-9 (1310)	Water	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
T 63124	MW-9 (1315)	Water	<0.005	0.679	<0.005	<0.005	<0.005	0.679
T 63125	MW-6	Water	<0.001	0.002	<0.001	0.012	<0.001	0.014
T 63126	MW-16	Water	<0.001	0.002	<0.001	0.011	0.002	0.015
QC			0.104	0.103	0.103	0.105	0.313	
RPD			1	1	0	0	1	
% Extraction Accuracy			108	106	107	109	106	
% Instrument Accuracy			104	103	103	105	104	
Reporting Limit:			0.001	0.001	0.001	0.001	0.001	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
MTBE/BTEX	EPA 5030	11/22/96	EPA 8020	11/22/96	BM	0.100 ea	.100 ea

BL 11-26-96

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

Fax Note 7671 Date 12/13/96 # pages 2
To Bill Olsen From Gil VanDeVenter
Co./Dept. OCD-Env. Bureau Co. GCL/BDM
Phone # 505 827 7154 Phone # 915 682 0008
Fax # 505 827 8177 Fax # 915 682 0028

12/13/1996 10:27 9156820028 GCL MIDLAND PAGE 01

GCL
Environmental Science and Engineering
A BDM International Company

☒ Albuquerque
505 Marquette NW, Ste. 1100
Albuquerque, NM 87102
(505) 842-0001
FAX: (505) 842-0595

☐ Mid Atlantic Region
4221 Forbes Blvd., Ste. 240
Lanham, MD 20706-4325
(301) 459-9677
FAX: (301) 459-3064

☐ NASA-WSTF
PO Drawer MM
Las Cruces, NM 88004
(505) 524-5353
FAX: (505) 524-5315

№ 10177

Chain of Custody

Date 11/19/96 Page 1 of

Lab Name TRACE ANALYSIS
Address 6701 ABERDEENE AVENUE
LUBBOCK, TEXAS 79424
Telephone (806) 794-1296
Samplers (SIGNATURES) Duane Salisbury

Analysis Request

Analysis columns: Halogenated Volatiles 601/8010; Aromatic Volatiles 602/8020; Phenols, Sub Phenols 604/8040; Pesticides/PCB 608/8080; Polynuclear Aromatic Hydrocarbons 610/8310; Volatile Compounds GC/MS 624/8240; Base/Neu/Acid Compounds GC/MS 625/8270; Total Organic Carbon (TOC) 415/9060; Total Organic Halides (TOX) 9020; Petroleum Hydrocarbons 418.1; TPH/BTEX Modified 8015; TCLP- Vol, Semi-Vol, Herbicides, Pesticides; TCLP- Metals; RCRA Metals(8); Priority Pollutant Metals (13); CAM Metals (18) TTLC/STLC; Flash Point; Corrosivity; Reactivity; Oil & Grease; Cyanide Total/Amenable; Chemical Oxygen Demand (COD); Number of Containers

Sample Number	Matrix	Location	Aromatic Volatiles 602/8020	Notes	Number of Containers
9611191005	H2O	MW-10	X	invest	2
9611191105	H2O	MW-3	X	invest	2
9611191210	H2O	MW-8	X	invest	2
9611191310	H2O	MW-9	X	rinsate	2
9611191315	H2O	MW-9	X	invest	2
9611191345	H2O	MW-6	X	invest	2
~~9611191350~~	~~H2O~~	~~Trip Blank~~	X	~~trip blank~~	1
9611191355	H2O	MW-16	X	duplicate of MW-6	2

Project Information	
Project	Navajo Refining
Project Director	Van Deventer
Charge Code No.	3035 005
Shipping ID. No.	
Via:	[illegible]

Sample Receipt	
Total No. of Containers	
Chain of Custody Seals	
Rec'd Good Condition/Cold	
Conforms to Record	
Lab No.	

	1.	2.	3.
Relinquished By (Signature)	Duane Salisbury	[signature]	
(Time)	1500		
(Printed Name)	Duane Salisbury	Gil Van Deventer	
(Date)	11/19/96	11/20/96	
(Company)	GCL	GCL	
Received By (Signature)	[signature]	[signature]	Received By (Laboratory)
(Time)	1500		
(Printed Name)	Gil Van Deventer	HELEN [illegible]	
(Date)	11/19/96	[illegible]	
(Company)	GCL	TRACE	(Laboratory)

Special Instructions/Comments: ~~Bill directly to Navajo (Darrell Moore)~~ [illegible]

Distribution: White, Canary-Laboratory • Pink, GCL